SAN FRANCISCO COUNTYWIDE TRANSPORTATION PLAN

DRAFT FOR PUBLIC REVIEW

Prepared by:
San Francisco County Transportation Authority

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San Francisco Countywide Transportation Plan

Draft For Public Review

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Chapter 1
INTRODUCTION

This plan presents a long term strategy for improving transportation conditions in San Francisco while improving the city's livability and economy in a manner that is equitable to all. The Plan focuses on identifying and prioritizing capital investments in the City's transportation system designed to achieve this vision.

Transportation is a critical factor in our city's future because it is such a fundamental part of all our lives. The time and energy we expend traveling around the city and region is only the most obvious way transportation impacts us. Transportation also has a significant impact on our neighborhood livability and our economic well-being. Increases in traffic volumes through a neighborhood will increase air pollution, noise levels and decrease safety. Traffic congestion and unreliable transit service increases costs for businesses and people. This plan sets forth an approach to improving transportation that strives to meet the twin goals of increased livability and improved economy.

The San Francisco County Transportation Authority has prepared San Francisco's Countywide Transportation Plan (CTP) over a two-year period. San Francisco citizens authorized formation of the Transportation Authority in 1989 with their approval of a half-cent sales tax for transportation improvements in the city. In 1991 the Transportation Authority was designated as the city's Congestion Management Authority and under State law was given responsibility to prepare a county long range transportation plan. The Transportation Authority consists of all eleven of the County Board of Supervisors, sitting as Commissioners for the agency.

COUNTYWIDE PLAN DEVELOPMENT PROCESS

Plan development started with an extensive public outreach effort that included formal meetings in twelve neighborhood subareas, as well as numerous smaller meetings with interested advocacy groups, business groups and neighborhood groups. The public process continued through preparation of the plan itself, with active involvement of the Transportation Authority's Citizens Advisory Committee.

The first step in the planning process consisted of neighborhood meetings and discussions. This input was used to identify 'performance-oriented' approaches to transportation problems. In addition to public input, a committee of technical staff members from city departments and regional transportation agencies (the Technical Working Group – TWG) met and provided input for the plan. The TWG was used as a resource in identifying projects that would address the city's transportation needs.

Next, the performance-oriented approaches and projects were considered comprehensively in order to develop balanced transportation programs. One outcome of this effort was the development of five themes: the livable city, the regional city, the economically thriving city, the sustainable city and the equitable city. These themes were used to help evaluate how the

approaches and projects could be fit together into a comprehensive program designed to improve transportation conditions in San Francisco. By considering approaches and projects together in the context of the themes it was possible to develop strategies that balance modal needs with the need for improved transportation system performance identified by the public as a key goal for the plan.

Next, the MTC's regional transportation forecasting model was used to estimate transportation conditions in 2020 assuming current development projections and transportation investment strategy. These model results were used to define a problem statement (i.e., identify the City's most important transportation problems) for use in developing the Transportation Plan strategies that address these problems.

The results of the public process and analytically-developed problem statement were used to develop four strategies for improving transportation conditions in San Francisco. These four strategies would all be implemented and together they define a future planning and investment strategy that attempts to balance projects and programs into a comprehensive approach to addressing transportation needs in the City.

Finally, this plan recommends a dynamic approach to transportation planning in San Francisco. Some ideas in this plan are detailed enough to implement with little additional planning, others will require significant additional planning before a decision can be made on whether to implement it or not. In other words, the countywide transportation planning process is an on-going effort. The plan itself will be modified in coming years both through formal revisions and when specific situations require new approaches.

PLAN IMPLEMENTATION

Many San Francisco city departments and regional transportation agencies will need to work cooperatively to successfully implement the actions included in the San Francisco Countywide Transportation Plan. Each city department and regional agency will have an implementation role for particular actions based on its core mission. Several specific examples include: the San Francisco Department of Parking and Traffic will be responsible traffic signal network improvements, the Planning Department will be responsible for developing Activity Center plans, the Department of Public Works will be responsible for roadway projects and BART will be responsible for BART system improvements. The lead agencies work with other agencies and departments in the planning and implementation process.

The San Francisco County Transportation Authority will facilitate in seeking funding for projects, help departments and agencies in defining projects, coordinate transportation planning efforts between departments and regional agencies, and provide technical assistance.

One key implementation issue is funding. It is clear that additional funding will be necessary to implement all the transportation projects needed to solve mobility and access challenges for San Francisco and the region. One avenue for additional funding is through reauthorization of San Francisco's existing half-cent sales tax for transportation. This plan recommends reauthorization of the transportation sales tax and includes a sales tax expenditure plan. The expenditure plan is

presented as a stand-alone document in Appendix A, but the projected funding available from reauthorization is assumed in the description of plan strategies.

RELATIONSHIP TO FEDERAL AND STATE PLANNING EFFORTS

Solving transportation problems involves many different government agencies working together to develop plans, construct transportation projects, operate transit services, and make land use decisions. The San Francisco Countywide Transportation Plan will form a basic input to the Bay Area's Regional Transportation Plan (RTP) which is prepared by the Metropolitan Transportation Commission (MTC). The RTP sets the parameters for the region's use of federal transportation funds.

The RTP is also used to develop the Regional Transportation Improvement Program (RTIP). The RTIP in turn is used by the State of California as the basis for the Bay Area's part of the State Transportation Improvement Program (STIP) – the list of transportation projects that will be constructed with state transportation funds.

Thus the San Francisco Countywide Transportation Plan is the first step in a larger series of plans that build upon each other. Policies in the San Francisco plan must be consistent with those in the Bay Area RTP as well as policies at the state and federal level that guide funding decisions. This plan's vision and principles – as well as the actions that follow – were developed with these regional, state and federal policies clearly in mind.

For example, MTC has adopted five interrelated goals of mobility, economic vitality, community vitality, sensitivity to the environment, and promotion of equity. These are fully consistent with the San Francisco Countywide Transportation Plan's vision and principles. The MTC has also developed more detailed transportation control measures (TCMs) that are designed to reduce transportation impacts on air quality.

The federal government is a major source of funding for transportation improvements. To maximize the benefit of these funds it has adopted guidelines for planning transportation improvements. The federal government requires that the planning effort consider all types of modes including motorized, bikes, pedestrians and freight. Planning must also consider new technology, improving air quality (TCMs), the Americans with Disabilities Act, environmental justice, improving the region's economic vitality and environmental quality. Finally, the federal government requires that plans emphasize preserving the existing transportation system.

RELATIONSHIP TO REGIONAL AND LOCAL PLANNING EFFORTS

In addition to providing input to federal and state oriented planning efforts, the San Francisco Countywide Transportation Plan is an integral part of several regional and local planning efforts.

The General Plan is the most important planning document for the city of San Francisco. The General Plan's Transportation Element provides important transportation goals, policies and objectives that are used by the Planning Department to analyze development decisions and to provide direction to the City in a number of important policy areas. The Planning Department

and the San Francisco County Transportation Authority developed a memorandum of agreement (MOA) that outlined the roles of the respective agencies in preparation and implementation of the Countywide Transportation Plan. This MOA recognized the importance of the General Plan and set forth the cooperative approach anticipated by the Planning Department and the Transportation Authority. While the Planning Department has the lead on land use planning and decision making, the Transportation Authority has the lead for long range transportation planning and project programming.

Other major sources of information for the Countywide Transportation Plan are capital improvement programs and strategic plans developed by city departments and regional transportation agencies. For example, the San Francisco Bicycle Plan, developed by the Department of Parking and Traffic, was used to identify bicycle projects for the plan, and Muni's Strategic Plan was used to identify Muni projects for the plan. Similarly, BART's most recent strategic plan and Caltrain's Rapid Rail Plan were important sources of policy and project data for the Countywide Transportation Plan.

The Countywide Transportation Plan is intended to inform local and regional plans as well as be informed by those plans. City departments and regional transportation agencies will use the principles and programming recommendations in the San Francisco Countywide Transportation Plan to influence their plans in an iterative and on-going process.

PLAN ORGANIZATION

Chapter 2 of this plan presents an analysis of existing conditions. Chapter 3 describes Year 2020 transportation conditions under projected land use conditions and continuation of existing transportation investment strategy in San Francisco. A critical element of this chapter is definition of the 'transportation problem' facing San Francisco in the coming years.

Chapter 4 presents the plan's vision, principles and objectives, which were developed using the analytically-defined problem statement and extensive public outreach. Chapter 5 describes the structure of the plan and the planning studies recommended to further define projects that would be implemented as part of the four recommended strategies.

Chapters 6 through 9 describe the four strategies. Although each chapter describes a single strategy, the strategies are cumulative, since all are needed to fully solve projected transportation problems. Chapter 10 presents the plan's financial element. The recommended transportation sales tax expenditure program is presented in the Appendix.

Chapter 2
EXISTING CONDITIONS

In order to develop solutions to the transportation problems facing San Francisco, it is necessary to first clearly define the problems, as well as understand how they have they have changed over the years and what the consequences would be if those problems are not addressed adequately. This chapter describes San Francisco's existing transportation conditions and how they have changed over the past 35 years.

Perhaps the most consistent aspect of our transportation system is how people perceive it; namely, residents and businesses of San Francisco (as well as the entire Bay Area) have identified transportation as a major problem. Interestingly, however, the specific reasons why it has been identified as a problem have changed over the years. Evaluating the evolution of past trends and problems helps to understand how future recommended changes might affect the transportation system.

HISTORICAL PERSPECTIVE

San Francisco and its role in the Bay Area have changed significantly since 1965. The City's transportation problems have changed as well.

In 1965 San Francisco was the Bay Area's largest city with a population of approximately 755,000, representing 18 percent of the San Francisco Bay Area's population. The Port of San Francisco was the region's main freight terminal. The Financial District was the Bay Area's white-collar employment center. Many people in this 'Baby Boom' age lived in two parent households where most of the women stayed at home and the men went to work at relatively regular hours.

In the mid-1960s and the 1970s transportation problems were being caused by growing suburban residential development and increasing auto ownership. Roadways were becoming congested and most regional transit systems were not equipped to bring workers from the rapidly developing suburban areas into San Francisco. As a result, the San Francisco Bay Area region focused on improving its freeway network and building the BART rail system mainly designed to serve San Francisco-bound commuters. The citizens of San Francisco realized early on that freeways would destroy their city's livability and so rejected them. Unfortunately the City decision makers were unable to transfer the large amount of resources that were available for transportation infrastructure investments from freeway construction to investments in the City's public transportation system.

One of the most interesting trends since mid-1960s has been the continued suburbanization of both population and employment. This has had significant sociological and economic impacts throughout society but nowhere have the impacts been as drastic as in transportation. Perhaps this should not be surprising, as our past transportation policies and investment strategies were

actually one of the key promoters of suburbanization itself. Without highways and central city oriented suburban rail transit systems it would not have been possible to move out to the suburbs.

Once people had moved to the suburbs and highways had been built to move people around, jobs and shopping could leave the city too. Many American cities were nearly destroyed in the process being left with economically disadvantaged populations, a deteriorating infrastructure, a declining tax base and limited employment opportunities. San Francisco was able to survive in part due to its strong economy and its established role as a cultural and tourist center.

While San Francisco survived the age of suburbanization and has thrived in the last several years as the benefits of urban life become more widely recognized in society, and as the Bay Area's technological economic boom took off, the transportation impacts of suburbanization are being felt in the City. Understanding these impacts is an important part of understanding San Francisco's transportation problems today.

Today San Francisco with a population of about 772,000 is no longer the largest city in the region – San Jose with over 800,000 people has become the largest city in the Bay Area – and three suburban counties, Santa Clara, Contra Costa and Alameda, are expected to lead the region in population, household and job growth over the next 20 years. The Port of Oakland by virtue of its location convenient to railheads and ample space for modern container shipping has far outdistanced San Francisco in terms of freight shipments. San Francisco's Financial District is still a major regional job center, but it must compete with suburban office parks scattered throughout the Bay Area.

The most obvious change in transportation is the substantial number of people living in San Francisco and traveling to jobs in suburban locations outside the County. As many as a quarter million people continue to travel to San Francisco to work every day, but the number of San Francisco residents leaving the City to work has grown at a much higher rate over the last quarter century than the number of people commuting into San Francisco – a trend no one would have predicted thirty years ago.

While the number of San Francisco residents that work in the City has remained practically constant at about 300,000 over the past 35 years, the number of Bay Area residents that commute daily to San Francisco to work has grown from about 146,000 to more than 253,000, a 74 percent increase. By far the largest percentage change has been in the number of San Francisco residents working outside the City, which has grown from about 27,000 to almost 73,000, a 168 percent increase.

The highest growth in automobile traffic has been experienced by those facilities that accommodate outbound traffic from San Francisco to the south, such as U.S. 101 and I-280.

The problem faced by San Franciscans commuting to jobs outside of the City is that they generally must drive to work. Transit works best in relatively high density residential and employment centers where there are enough people to make it efficient to operate vehicles frequently and investments can be made so that transit can move quickly. Suburban job centers are generally poorly served by public transportation systems since they do not offer sufficient

densities to support frequent high capacity bus or rail service. Great strides are being made to improve transit connections by transit agencies and local governments in the suburbs, but there is a significant built environment and many institutional barriers that must be overcome. Recently, increasing traffic congestion and efforts to encourage 'reverse' commute via transit have had success attracting many people to BART and Caltrain in these markets.

Exhibit 2-1 summarizes some of the changes in demographics and travel characteristics over the last 35 years that have occurred in San Francisco and the Bay Area.

- Following two decades of decline in the 1960s and 1970s, San Francisco's population has increased steadily since 1980 and by 1995 had reached about 772,200 people, a two percent increase since 1965.
- The percentage of Bay Area residents living in San Francisco County has declined steadily decreasing from 18 percent in 1965 to 12 percent currently.
- The current San Francisco County population density, about 16,400 residents per square mile, is the highest in the Bay Area.
- Employment in San Francisco totals approximately 566,000 jobs. This is similar to the level of employment in the County in 1990, prior to the last economic recession.
- Total employment in the County grew by about 83,200 jobs between 1965 and 1998, a 17 percent increase.
- The percentage of Bay Area employment located within San Francisco County has declined steadily over the past 20 years, decreasing from a high of 28 percent in 1975 to the current 17 percent.
- The current San Francisco County employment density, about 12,000 employees per square mile, is the highest in the Bay Area.
- The number of licensed drivers in San Francisco increased by almost 50 percent between 1970 and 1998. The number of licensed drivers in the rest of the Bay Area region increased at a higher rate of almost 80 percent, during the same period.
- The percentage of San Francisco residents licensed to drive has grown from almost 50 percent of the total population in 1970, to 65 percent today.
- The number of registered vehicles in San Francisco (excluding trailers and motorcycles) increased by almost 25 percent between 1970 and 1998. This growth rate is about half the rate of licensed drivers for the same period.
- The number of registered vehicles (excluding trailers and motorcycles) in the rest of the Bay Area region increased by almost 150 percent between 1965 and 1970, about eight times faster than San Francisco. As a result, the percentage of total Bay Area vehicles that are registered in San Francisco decreased from 16 percent in 1965 to 8 percent in 1998.
- Although the average number of registered vehicles per capita in San Francisco increased slightly from 0.47 in 1970 to 0.53 in 1998, the average number of vehicles per licensed driver decreased substantially from 0.99 to 0.53 during the same period.

Exhibit 2-1
Demographic and Travel Characteristics Trends
for San Francisco and the Bay Area Region

	1965	1970	1975	1980	1985	1990	1995	1998
DEMOGRAPHICS								
Population								
San Francisco County	755,000	715,670	695,400	678,970	718,500	723,960	751,700	772,220
Rest of S.F. Bay Area	3,518,900	3,912,530	4,202,000	4,500,820	4,819,150	5,296,190	5,642,600	5,880,020
San Francisco % of Total for Bay Area	18%	15%	14%	13%	13%	12%	12%	12%
San Francisco Density (pop./sq. mile)	16,060	15,230	14,800	14,450	15,290	15,400	15,990	16,430
Employment								
San Francisco County	482,800	440,300	447,100	552,200	553,440	566,640	534,610	566,010
Rest of S.F. Bay Area	N.A.	1,264,700	1,156,000	1,985,600	2,204,730	2,506,360	2,493,680	2,720,680
San Francisco % of Total for Bay Area	N.A.	26%	28%	22%	20%	18%	18%	17%
San Francisco Density (empl. / sq.mile)	10,270	9,370	9,510	11,750	11,780	12,060	11,370	12,040
Driver Licenses								
San Francisco County	N.A.	339,600	375,700	401,900	437,300	465,700	488,000	504,100
Rest of S.F. Bay Area	N.A.	2,238,300	2,758,700	3,120,900	3,425,700	3,764,000	3,896,000	4,024,200
S.F. % of Total for Bay Area	N.A.	13%	12%	11%	11%	11%	11%	11%
% of S.F. Population licensed to drive	N.A.	47%	54%	59%	61%	64%	65%	65%
Vehicle Registrations								
San Francisco County	347,600	336,900	330,300	347,100	398,800	406,900	392,100	412,700
Rest of S.F. Bay Area	1,856,100	2,283,300	2,743,800	3,305,900	3,656,200	4,223,800	4,310,900	4,577,500
San Francisco % of Total for Bay Area	16%	13%	11%	10%	10%	9%	8%	8%
Registered vehicles per capita in S. Francisco	0.46	0.47	0.47	0.51	0.56	0.56	0.52	0.53
Registered vehicles per licensed driver in S.F.	N.A.	0.99	0.88	0.86	0.91	0.87	0.80	0.82
TRAVEL CHARACTERISTICS								
Avg. Daily County-to-County Commuting								
Reside in SF and work in SF	302,600	283,200	283,700	284,300	292,100	299,900	290,800	301,100
Reside in SF and work elsewhere	27,200	32,300	39,700	47,200	59,300	71,500	60,800	72,800
Reside elsewhere and work in SF	145,500	169,000	197,900	226,700	238,800	250,900	232,300	253,200
Average Vehicle Occupancies								
Home to Work/Work to Home Trips	1.18	1.16	1.15	1.13	1.11	1.10	1.10	1.10
All Trip Purposes	1.44	1.39	1.35	1.30	1.28	1.26	1.26	1.26

Source: Wilbur Smith Associates from various sources

Note:

N.A. = Not Available

Exhibit 2-2
Transportation System Trends for San Francisco and the Bay Area Region

	1965	1970	1975	1980	1985	1990	1995	1998
San Francisco MUNI								
Annual Ridership (x 1,000)	202,040	187,560	216,790	181,890	255,520	233,470	216,200	219,270
Daily Ridership	647,270	603,300	696,750	582,940	821,140	757,190	688,350	701,820
Annual MUNI Passengers per capita	268	262	312	268	356	322	288	284
Bay Area Rapid Transit								
Daily Ridership to/from San Francisco at the Transbay Tunnel	(1)	(1)	49,500	74,000	104,800	118,400	126,700	138,800
Daily Ridership to/from San Francisco at the S. Mateo Co. line	(1)	(1)	5,000	8,900	9,000	9,900	12,000	14,000
Daily Ridership within San Francisco	(1)	(1)	N.A.	N.A.	N.A.	N.A.	N.A.	57,200
AC Transit								
Daily Ridership to/from S. F.	41,500	45,000	40,000	37,000	27,000	16,500	9,000	13,500
Golden Gate Transit								
Daily Ridership to/from San Francisco (bus plus ferry)	(2)	(2)	21,000	26,900	22,400	21,100	21,600	22,000
SamTrans								
Daily Ridership to/from S. F.	(3)	(3)	(3)	5,000	5,500	5,200	5,300	5,100
Caltrain								
Daily Ridership to/from S. F.	14,700	12,700	10,300	14,100	11,600	13,900	14,200	14,500
Average Daily Highway Traffic Volumes								
At the San Francisco – Marin county line (Golden Gate Bridge)	70,000	90,000	92,000	98,000	113,000	120,000	115,000	116,000
At the San Francisco – Alameda county line (Bay Bridge)	134,000	166,000	173,000	189,000	240,000	242,000	274,000	272,000
At the San Francisco - San Mateo county line	228,400	242,900	294,400	344,400	399,000	429,500	455,900	479,600
TOTAL	*432,400*	*498,900*	*559,400*	*631,400*	*752,000*	*791,500*	*844,900*	*867,600*
Avg. Daily Person Trips to/from S. Francisco								
To/from North Bay	100,800	125,400	144,893	154,300	167,040	172,300	166,500	168,160
- Percent Auto	100%	100%	86%	83%	87%	88%	87%	87%
- Percent Transit	0%	0%	14%	17%	13%	12%	13%	13%
To/from East Bay	234,455	276,288	322,473	356,700	439,000	439,820	480,940	495,020
- Percent Auto	82%	84%	72%	69%	70%	69%	72%	69%
- Percent Transit	18%	16%	28%	31%	30%	31%	28%	31%
To/from South Bay	343,596	351,141	406,759	466,820	527,820	560,270	593,934	623,896
- Percent Auto	96%	96%	97%	96%	97%	97%	97%	97%
- Percent Transit	4%	4%	3%	4%	3%	3%	3%	3%
TOTAL	*678,851*	*752,829*	*874,125*	*977,820*	*1,133,860*	*1,172,390*	*1,241,374*	*1,287,076*
- Percent Auto	*92%*	*92%*	*86%*	*84%*	*85%*	*85%*	*86%*	*85%*
- Percent Transit	*8%*	*8%*	*14%*	*16%*	*15%*	*15%*	*14%*	*15%*
Costs of Transportation (4)								
S.F. MUNI Basic Fare	$0.81	$0.88	$0.80	$1.03	$0.92	$1.06	$1.09	$1.00
Bay Bridge Toll	$2.69	$2.19	$1.60	$1.54	$1.15	$1.25	$1.09	$2.00
Golden Gate Bridge Toll	$2.69	$2.19	$2.40	$2.06	$1.53	$2.51	$3.28	$3.00
Avg. Driving Costs per Mile	$0.57	$0.52	$0.46	$0.44	$0.37	$0.43	$0.46	$0.46
Avg. Gasoline Price per Gallon	$1.67	$1.50	$1.85	$2.67	$1.86	$1.81	$1.35	$1.29

Source: Wilbur Smith Associates from various sources

Notes

N.A. Not Available

(1) BART's Daly City service started in 1973 and Transbay service started in 1974

(2) Golden Gate Transit ferry service started in August 1970 and bus service started in 1971

(3) SamTrans was created in 1975

(4) In constant 1998 dollars

An analysis of Exhibit 2-2 indicates the following trends in public transportation within as well as to and from San Francisco over the past 35 years:

- Muni's daily ridership has remained approximately constant over the years, between 650,000 and 700,000 daily passengers, with a peak of about 820,000 in 1985.
- BART ridership to and from San Francisco has shown a 180 percent increase between 1975 and 1998.
- AC Transit has suffered a steady decline in patronage coming to San Francisco as a result of the opening of BART. The downward trend was reversed in 1995.
- SamTrans has had approximately the same daily patronage in and out of San Francisco from 1965 to 1998.
- Caltrain carries today approximately the same number of passengers into San Francisco as it did in 1965. Ridership declined between 1965 and 1975. The trend reversed and ridership started to increase in the early 1990s.
- Automobile travel to and from San Francisco on the other hand has mostly increased. Overall travel has grown by 100 percent since 1965. Although all three corridors (North Bay, South Bay and East Bay) have experienced substantial growth, the highest growth in both absolute and relative terms has occurred at the San Mateo-San Francisco county line (251,200 daily vehicles, 110 percent increase).
- The highest percentage growth in total person trips traveling daily to and from San Francisco over the last 33 years has been in the East Bay corridor (111 percent), followed by the South Bay corridor (82percent) and the North Bay (67percent).
- The use of transit for trips to and from San Francisco has remained steady at approximately 15 percent over the last two decades. The highest transit usage occurs in the East Bay corridor (31 percent), followed by the North Bay corridor (13 percent) and the South Bay corridor (3 percent).
- Muni single ticket fares in constant 1998 dollars have increased slightly over the last 32 years from 81 cents in 1965 to the current $1.00.
- Tolls on the Bay Bridge have decreased in constant dollars from $2.69 in 1965 to $2.00 in 1998[1]. On the other hand, tolls on the Golden Gate Bridge increased from $2.69 in 1965 to $3.00 today[2].
- The average driving costs for an automobile in constant 1998 dollars in the Bay Area decreased by 20 percent between 1965 and 1998, mostly influenced by a 25 percent decrease in the cost per gallon of gasoline that went from $1.65 in 1965 to $1.29 in 1998[3].

[1] Tolls on the San Francisco-Oakland Bay Bridge for two-axle passenger vehicles changed in 1969 from 25 cents each way to 50 cents westbound only; tolls in the westbound direction increased in 1977 from 50 cents to 75 cents; to $1.00 in 1987; to $2.00 in 1998.

[2] Tolls on the Golden Gate Bridge for two-axle passenger vehicles increased in 1968 from 25 cents each way to 50 cents southbound (northbound tolls were eliminated); to 75 cents southbound in 1974; to $1.00 southbound in 1977; to $1.25 southbound in 1981; to $2.00 southbound in 1989; to $3.00 southbound in 1991.

[3] Average cost per gallon of gasoline in San Francisco was $1.52 in December 1999

Chapter 3
FUTURE BASELINE TRANSPORTATION CONDITIONS

This chapter outlines expected future transportation conditions based on existing demographic projections and based on continued transportation investment in existing programs (for example continuing to replace Muni vehicles when they wear out and repave streets at the current rate). The chapter includes descriptions of future demographic projections, the transportation model, projected future transportation conditions (based on model data), and a problem statement for the Transportation Plan.

TRANSPORTATION DEMAND MODELING

A key part of the transportation planning process is estimating future transportation conditions. Transportation planners typically use computerized travel demand forecasting models as one of the tools in this process.

A travel demand forecasting model consists of a series of mathematical equations that convert a given data set into a forecast of where, when and how people will travel. In order to use the model, projected changes in demographics, socio-economic characteristics, land uses and transportation networks are entered into the equations, so that the model is able to provide results that describe how well the transportation network will perform under the future conditions. Since no model can include all the factors that affect travel behavior – for example the impact of changes in the economy – the use of a travel demand model will not be able to provide exact answers to all the possible questions but good models provide an important tool for the planning process.

Travel forecasting models were first developed in the 1950s in Detroit and Chicago to help plan urban freeway networks and center-city oriented rail transit systems. Model development in the San Francisco Bay Area dates back to the 1960s when the Bay Area Transportation Study Commission (a predecessor of Metropolitan Transportation Commission) was created by the California legislature to prepare a master regional plan and provide for an ongoing planning program. The algorithms used by these models have been improved and refined since then, however the basic logic behind these models has not changed significantly.

The majority of the travel demand models in use today assume that travel patterns are the result of single independent decisions about how much, when, where and how to travel. The most significant advancements in the past ten years have been in transferring complex models from larger to smaller computers. With this transition has come some simplification of the model systems and some enhancements to improve the sensitivity, flexibility and accuracy of the models.

In order to prepare the San Francisco Countywide Transportation Plan, the MTC's regional transportation model was used to evaluate future transportation conditions. The regional model

was used to project transportation conditions under baseline conditions and each of the cumulative plan strategies.

In addition to using the MTC's regional model for purposes of evaluating plan strategies, as part of the planning process a San Francisco transportation model was developed for use evaluating transportation conditions in the City. This new model is fully consistent with the MTC model and is most appropriately used for detailed transportation analyses. The MTC model was used for this plan since both it and the plan focus on major transit and highway facilities.

San Francisco's new travel demand model has a higher level of geographic and demographic detail than the regional model. It also uses improvements in computer technology to incorporate logic that better represents the interaction between land use and travel patterns. Therefore the new model will be used in future planning studies and by city departments to better plan transportation facilities and land uses. In fact, a key recommendation of this plan is that the new model be used as a tool in completing the activity center and corridor transportation studies (described in Chapter 5) during the coming years.

DEMOGRAPHIC PROJECTIONS

The Transportation Plan's horizon is the year 2020. Exhibit 3-1 presents some of the key demographic input data used in the transportation model. Under state and federal planning guidelines model input data must be consistent with regionally adopted data sets in this stage of the analysis. In the San Francisco Bay region this data is provided by the Association of Bay Area Governments and the Metropolitan Transportation Commission.

There are a few key population and employment changes in San Francisco from 1998 to 2020 that bear discussion. The population of San Francisco is projected to grow minimally, with an increase of only about 20,000 residents (3 percent) over the 22-year period. Due to the decreasing size of households, the number of households will increase. However, the number of employed residents will also increase substantially, with an increase of 78,900 persons (20 percent) over the period.

Employment in San Francisco is expected to grow by 113,640 jobs, representing an increase greater than the number of employed residents, which indicates a continued reliance on import of workers, of at least 35,000. Because about 75,000 San Francisco residents are currently employed outside of San Francisco and the number is likely to increase, the import could be substantially more than 35,000, easily reaching 100,000 to 120,000 workers. The most significant employment growth will occur in the category of service jobs. Service jobs will have an increasing share of total jobs, with an expected increase from 43 percent in 1998, to 49 percent of total jobs in 2020.

Exhibit 3-1
Model Inputs for Population and Employment
For San Francisco and Bay Area Region

	1998	2020	Percent Change
San Francisco			
Employment			
Service	244,530	330,430	35%
Retail	75,840	86,440	14%
Manufacturing & Wholesale	62,960	68,190	8%
Other	182,680	194,590	7%
San Francisco Total	566,010	679,650	20%
Population			
Population	772,200	793,400	2.7%
Households	314,600	337,340	7.2%
Persons per Household	2.45	2.28	-6.9%
Employed Residents	394,100	473,000	20%
Mean Household Income*	$63,800	$89,300	40%
Nine-County Bay Area			
Total Employment	3,286,700	4,397,900	34%
Total Population	6,500,500	7,774,400	20%

Source: *Association of Bay Area Governments, "Projections '98: Forecasts for the San Francisco Bay Area to the Year 2020" (December 1997)* and Metropolitan Transportation Commission.
* In constant 1995 dollars

Comparing the projected San Francisco population and employment growth to the rest of the nine-county Bay Area region indicates that San Francisco's growth in population (20,000 persons) represents only 1.5 percent of the entire region growth of 1,273,900 persons. San Francisco's growth in employment (113,640 jobs) represents 10 percent of the region's growth of 1,111,200 jobs.

FUTURE TRANSPORTATION CONDITIONS

The demographic data outlined above for Year 2020 was used as the basic input to the travel demand forecasting model. Exhibits 3-2 and 3-3 summarize transportation conditions in the Year 2020 assuming that all the transportation improvements included in the Baseline Strategy, as described in Chapter 6 of this report are implemented. Exhibit 3-2 compares current daily transportation conditions to future conditions in 2020. Some of the key points are described below:

- Person Trips – The total number of person trips with an origin or destination within San Francisco will grow from about 3.1 million in 1998 to almost 3.6 million in 2020, a 17 percent increase. The percentage growth for both auto and transit trips would be similar, approximately 17 to 18 percent.

Exhibit 3-2
Comparison of Selected Travel Demand Model Outputs
For 1998 and 2020 Conditions
Daily Travel Demand

	1998	2020 Baseline	Difference	Percentage Change
Person-Trips by Mode (1)				
Within San Francisco				
Auto	775,400	886,100	110,700	14%
Transit	588,700	664,100	75,400	13%
Other	503,200	567,100	63,900	13%
Total Person-Trips	1,867,300	2,117,300	250,000	13%
From/to San Francisco				
Auto	980,700	1,171,100	190,400	19%
Transit	216,200	283,700	67,500	31%
Other	8,000	9,300	1,300	16%
Total Person-Trips	1,204,900	1,464,100	259,200	22%
Total				
Auto	1,756,100	2,057,200	301,100	17%
Transit	804,900	947,800	142,900	18%
Other	511,200	576,400	65,200	13%
Total Person-Trips	3,072,200	3,581,400	509,200	17%
Mode Split				
Within San Francisco				
Auto	41.6%	41.8%	0.2%	
Transit	31.5%	31.4%	-0.1%	
Other	26.9%	26.8%	-0.1%	
From/to San Francisco				
Auto	81.4%	80.0%	-1.4%	
Transit	17.9%	19.4%	1.5%	
Other	0.7%	0.6%	-0.1%	
Total				
Auto	57.2%	57.4%	0.2%	
Transit	26.2%	26.5%	0.3%	
Other	16.6%	16.1%	-0.5%	

Source: *Metropolitan Transportation Commission Travel Demand Model, 1998 Conditions,* and Wilbur Smith Associates, March 2000

Note:
(1) Linked person-trips with at least one origin or destination within San Francisco.

- About half of the growth will be in trips within San Francisco, which will increase by 250,000 daily trips, a 13 percent increase.
- A slightly larger increase (259,000 daily trips) will occur in trips to and from San Francisco, representing a 22 percent increase.
- Modal Split – The mode split in the year 2020 will be similar to the existing mode split, both for trips within San Francisco, as well as trips to and from San Francisco. Overall auto trips will increase their share by 0.2, while transit trips will increase by 0.3 percent. Other modes of transportation will increase overall but at a slower rate than auto and transit, thus decreasing their relative modal share by 0.5 percent.
- The transit share within San Francisco will remain practically the same (although the overall number of trips will grow), while the transit share for trips to and from San Francisco will increase by 1.5 percent, from 17.9 percent to 19.4 percent by 2020.

The travel demand forecasting model results help planners identify the transportation system deficiencies expected in 2020, given the expected changes in land use, demographics, and planned transportation system improvements. The most interesting finding is that even with the planned investments in the system, transportation demand is expected to outpace the available capacity, resulting in deteriorating transportation conditions. Exhibit 3-3 presents future transportation data for San Francisco. Highlights of this data include:

- Traffic – The number of vehicle miles traveled within San Francisco County during the AM peak commute period will increase by 18 percent between 1998 and 2020, while the number of vehicle hours of travel will increase by 23 percent during the same period. The higher growth in vehicle hours as compared to vehicle miles indicates that congestion on San Francisco streets will increase.
- Congestion – The number of vehicle hours spent in San Francisco on streets and freeways operating under free-flow conditions will decrease by 1,400 hours (9 percent), while the number of vehicle hours spent on facilities operating under congested or forced-flow conditions will increase by 6,100 hours (200 percent).
- Regional Transit – The number of transit riders coming inbound to San Francisco during the AM peak commute period will grow by 40 percent (26,400 trips). The major investment being made in the San Francisco Airport BART extension is also likely to increase non-peak period transit ridership in that corridor.
- Muni Transit – The number of passengers taking Muni during the AM peak commute period will grow by 17 percent (37,800 trips). The highest percentage growth rate will be for the Muni Metro system, due to its expansion along the Third Street corridor to Mission Bay and the Bayview district. The overall number of passenger miles on Muni will increase by 17percent, a slightly higher rate than the overall number of passengers (16 percent), indicting that the average trip on Muni in 2020 will be slightly longer than it is today.

Exhibit 3-3
Comparison of Selected Travel Demand Model Outputs
For 1998 and 2020 Conditions
AM Peak Period

	1998		2020 Baseline		Percent Change
Highway (1)					
Vehicle Miles Traveled	417,700		492,100		18%
Vehicle Hours Traveled	14,500		17,800		23%
Average Travel Speed (mph)	28.8		27.6		-4%
Vehicle Hours of Congestion (2)					
Free-flow conditions	15,400		14,000		-9%
Approaching congestion	8,500		11,700		38%
Congested conditions	2,900		8,600		197%
Forced-flow conditions	100		500		400%
Transit					
Regional Transit Trips into San Francisco (3)	66,200		92,600		40%
MUNI Transit Trips					
Motor Coach	145,200	63%	158,300	59%	9%
Trolley Coach	63,000	27%	80,300	30%	27%
Metro LRV	17,600	8%	24,300	9%	38%
Cable Car	5,600	2%	6,300	2%	13%
Total MUNI Transit Trips	231,400	100%	269,200	100%	16%
MUNI Passenger Miles	531,100		618,800		14%

Source: *Metropolitan Transportation Commission Travel Demand Model, 1998 Conditions,* and Wilbur Smith Associates, March 2000

Notes:

(1) For trips within San Francisco and between San Francisco zones and counties lines for surface streets only.

(2) Includes surface streets and freeways within San Francisco.

(3) Regional trips on BART, AC Transit, Golden Gate Transit, SamTrans and Caltrain inbound into San Francisco during the AM peak period

In addition to the above overall results, a more detailed comparison of transportation conditions in 1998 to the projected conditions in 2020 Baseline Strategy revealed the following transportation problems:

- Traffic congestion is expected to worsen on key corridors in the City including:
  - Van Ness Avenue
  - 19th Avenue
  - Geary Boulevard
  - Fell/Oak couplet
  - Franklin/Gough couplet
  - Masonic Avenue
- Reverse commuting (work-related trips from San Francisco to the rest of the Bay Area region) is expected to increase, particularly across the San Francisco-San Mateo County line. This will lead to:
  - Increased congestion on US 101, between the I-80/U.S. 101 junction and the San Francisco international airport.
  - Increased congestion on I-280 between the U.S. 101junction and the I-380 junction.
- Key inbound gateways into San Francisco will become more congested, increasing average travel times:
  - The San Francisco/Oakland Bay Bridge (I-80): 24 percent
  - The Golden Gate Bridge (U.S. 101): 59 percent
  - U.S. 101 northbound: 6 percent
  - I-280 northbound: 10 percent
- Auto trips passing through the City on freeways and surface streets will increase'
- Travel mode split for San Francisco residents remains unchanged for work trips, suggesting that a greater emphasis on transit usage is needed to achieve the City's Transit First Policy.
- Average auto travel times between San Francisco neighborhoods will increase by up to six percent as shown in Exhibit 3-4.
- Surface travel speeds in San Francisco will decline overall, between five and twenty percent
- Average travel times between San Francisco neighborhoods and key representative regional destinations will increase up to 22 percent as shown in Exhibit 3-5. The highest percentage delay increases will be on those trips to/or from the East Bay and the North Bay.

Exhibit 3-4
Increase in Average Travel Times
From Indicated Neighborhood to other
San Francisco Neighborhoods
From 1998 to 2020 Baseline

Neighborhood	Percent Increase
Presidio	5.7%
Marina/Pacific Heights	3.5%
Russian Hill/Nob Hill	3.4%
Chinatown/North Beach	3.1%
Outer Richmond	4.0%
Inner Richmond	4.5%
Laurel Heights	4.4%
Western Addition	1.3%
Downtown/Civic Center	2.2%
South of Market	2.0%
Golden Gate Park	4.2%
Haight/Upper Market	2.7%
Mission	-0.1%
Potrero Hill	-1.8%
Outer Sunset	3.5%
Inner Sunset	2.4%
Diamond Heights/Noe Valley	1.4%
Parkside	2.4%
West of Twin Peaks/Park Merced	3.0%
Glen Park/Westwood	1.0%
Bernal Heights	0.6%
Bayview/Hunters Point	1.6%
Lake Merced	2.4%
Ingleside/Ocean View	2.5%
Outer Mission/Crocker Amazon	1.7%
Visitacion Valley	2.5%

Source: Metropolitan Transportation Commission Travel Demand Model, 1998 Conditions, and Wilbur Smith Associates, March 2000

Exhibit 3-5
Increase in Average Travel Times
Between San Francisco Neighborhoods and Representative Regional Destinations
From 1998 to 2020 Baseline

Neighborhood	San Francisco Airport	Palo Alto	San Jose	Berkeley	Walnut Creek	San Rafael
Presidio	5.1%	2.8%	3.2%	14.4%	18.5%	18.9%
Marina/Pacific Heights	5.6%	2.9%	3.3%	15.6%	19.5%	19.4%
Russian Hill/Nob Hill	5.2%	2.7%	4.2%	16.0%	20.0%	16.4%
Chinatown/North Beach	5.0%	2.7%	10.1%	15.3%	19.4%	16.0%
Outer Richmond	4.8%	2.7%	2.5%	14.0%	18.1%	18.8%
Inner Richmond	5.2%	2.8%	2.6%	14.6%	17.2%	19.5%
Laurel Heights	5.7%	3.0%	2.9%	16.1%	19.9%	18.3%
Western Addition	4.0%	2.1%	2.1%	15.9%	20.0%	17.6%
Downtown/Civic Center	6.6%	3.0%	3.9%	18.0%	19.8%	17.1%
South of Market	6.6%	3.0%	4.0%	18.6%	22.2%	21.5%
Golden Gate Park	5.0%	2.6%	2.5%	14.8%	18.9%	18.8%
Haight/Upper Market	7.6%	3.7%	3.3%	15.8%	17.6%	16.7%
Mission	5.0%	2.3%	2.3%	15.7%	20.0%	16.1%
Potrero Hill	1.9%	1.2%	1.4%	18.2%	21.8%	21.4%
Outer Sunset	4.0%	2.2%	2.2%	12.8%	16.8%	17.1%
Inner Sunset	4.7%	2.3%	2.3%	12.4%	16.7%	17.7%
Diamond Heights/Noe Valley	8.0%	3.8%	3.3%	13.9%	18.4%	16.8%
Parkside	2.6%	1.5%	1.7%	11.7%	15.9%	16.4%
West of Twin Peaks/Park Merced	2.8%	1.5%	1.7%	13.1%	17.4%	17.4%
Glen Park/Westwood	5.6%	2.5%	2.4%	14.5%	18.8%	14.7%
Bernal Heights	5.5%	2.3%	2.3%	15.4%	19.6%	19.2%
Bayview/Hunters Point	5.5%	2.3%	2.2%	14.2%	18.5%	18.2%
Lake Merced	1.3%	1.0%	1.3%	12.0%	16.3%	16.6%
Ingleside/Ocean View	1.4%	1.0%	1.3%	14.2%	18.4%	16.2%
Outer Mission/Crocker Amazon	5.0%	2.2%	2.2%	14.3%	18.6%	15.5%
Visitacion Valley	6.2%	2.4%	2.3%	15.8%	19.8%	19.4%

Source: *Metropolitan Transportation Commission Travel Demand Model, 1998 Conditions,* and Wilbur Smith Associates, March 2000

While the model provides large quantities of data on travel demand and capacity that help us define certain system deficiencies, other resulting conditions are not quantified in the model output and must be considered in describing the predicted transportation problems. For example, as the number of vehicles on the streets and overall traffic congestion increase, the following impacts are also likely:

- Traffic accidents are likely to increase
- Streets and roads may deteriorate at a more rapid rate
- Transit vehicles will be operating in more severe conditions that will impact vehicle maintenance, and transit service reliability may decrease.

All these problems must be addressed in the Countywide Transportation Plan.

TRANSPORTATION PLAN PROBLEM STATEMENT

Analysis of the historical trends in auto and transit use, as well as projection of future transportation conditions provided the basis for developing a framework for addressing San Francisco's future transportation needs.

As currently planned, the future Year 2020 roadway and transit network in San Francisco will be similar to today's network. During this time period transportation demand will increase significantly causing highway and transit operations to deteriorate. For example, the number of vehicle hours on roadway facilities experiencing congestion in San Francisco will grow over 200 percent by the Year 2020. Similarly, the expected increase in transit patronage (15 to 30 percent) will increase passenger loads in transit vehicles, result in overcrowding, particularly during peak periods. Furthermore, increased congestion on streets will reduce surface transit reliability.

Examining historic travel trends over the past 35 years shows that there has been a 100 percent increase in daily person trips. Meeting this increased demand with public transit service has been San Francisco's policy, but transit has only managed to keep its share of trips constant over the period. Future projections show still higher increases in the number of trips so a key part of improving transportation will be attracting a higher percentage of trips to transit.

While the total percentage of trips made by transit has remained constant, transit ridership into San Francisco increased by about 200 percent. The reason for this increase has been the major investments in the local and regional transit systems that have occurred during this period; most notably the construction of BART, implementation of Golden Gate and SamTrans Transit Districts, creation of the Peninsula Joint Powers Board (Caltrain), and the Muni Metro tunnel.

The increase in regional transit ridership supports the idea that providing ways for transit to avoid traffic congestion (by constructing grade-separated systems or providing transit priority) can attract more people to transit. Another way to attract trips is by improving access to regional transit systems in San Francisco. This could take the form of improved Muni connections such as the Muni Metro Extension to Caltrain and improved reliability on existing Muni routes.

In terms of automobile travel, although there has not been a major capacity increase in San Francisco's roadway and highway network in the last 35 years congestion levels have continued to increase as the number of vehicles traveling within San Francisco and entering San Francisco have more than doubled. Drivers seem willing to accept congested conditions because their out-of-pocket costs (costs of gasoline, bridge tolls and operating costs) have decreased in constant dollars during this period. This suggests that the cost of driving and parking is lower than the market would suggest is optimal for appropriate distribution of resources. Therefore it may be possible to collect more revenue from drivers to pay for new services and facilities as well as to better match transportation demand and supply.

Future land use and demographic projections prepared by ABAG and MTC indicate that both the number of employed San Francisco residents and San Francisco employment will grow by 20 percent in the next 20 years. This means that San Francisco will still need to attract many workers to the city from the region, at a time when many City residents are traveling out of the city to jobs. These trends indicate that the demands on our transportation system will grow at a similar or greater rate than they have since 1980, as employment generates more trips than residential units. A land development policy that supports providing housing for those employed in San Francisco would help reduce transportation impacts of these demographic trends.

In summary, given the current transportation plans and projected demographic changes, San Francisco faces the following major transportation planning issues:

- Mode split will remain essentially constant, meaning that there will be no increase in the percentage of transit and alternative mode trips during the next twenty years (although the absolute number of those trips will increase) – increasing the percentage of trips made by transit and alternative transportation will be critical to solving San Francisco's transportation problems.
- An increased percentage of trips in San Francisco will be regional in nature (i.e., trips with one end in San Francisco and the other end in another county) – improving transit access to the region is a critical need.
- Congestion on city streets and regional highways will increase (the average travel speed will be reduced by 5 percent).
- Surface transit operations will deteriorate due to increased traffic congestion – making transit less attractive unless something can be done that enables transit to bypass congestion.
- Transit trips on grade separated systems will increase since these systems avoid surface street congestion
- Travel speeds to the East Bay and North Bay deteriorate significantly

The strategies recommended in the Countywide Transportation Plan are intended to achieve the Plan's vision and principles by addressing these major issues.

Chapter 4
POLICY ELEMENT

The first step in any planning process is to develop a vision for the future. Next, goals and objectives are developed to help guide the decisions that will need to be made to attain that vision. This chapter outlines the vision, goals and objectives recommended in this plan to provide for San Francisco's future transportation needs.

VISION AND PRINCIPLES

Development of the plan started by asking San Franciscans to identify the transportation problems impacting the city. Results of this process were surprising – San Franciscans did not propose many specific transportation projects but rather asked for very basic improvements in transportation service qualities that would improve their quality of life. For example, San Franciscans wanted more reliable transit service, vehicles traveling at a slower speed through neighborhoods, and parking at businesses. See Exhibit 4-1 for a summary of issues raised during the initial public meetings.

In addition to these performance-oriented improvements, many San Franciscans described the impacts that transportation conditions have on their ability to work, play and socialize. People associated poor transportation conditions with poor economic conditions – it's hard to get off welfare if you can't travel to a job. People understood that part of solving San Francisco's housing crisis was improving public transportation so that housing can be built without requiring high cost parking. People recognized the adverse impacts the automobile had on livability, but were frustrated at their inability to get around efficiently by alternatives such as transit or bike.

San Franciscans carried through this understanding of how transportation affects all aspects of life when they were asked to propose improvements. While the problems that they wanted solved were basic, the solutions they recommended were innovative. Interestingly, these solutions were often non-traditional, including using new communications technology to replace travel, changing land uses to reduce travel demand, and pricing transportation services to better match transportation demand and supply while providing funding for needed improvements.

In addition to the public involvement process, San Francisco city departments and regional transportation agencies were asked to help identify projects and programs that would help solve future transportation problems. Many of the projects and programs identified by these agencies were from strategic plans developed by the agencies (e.g., short range transit plans from Muni, BART and Caltrain, as well as capital improvement plans from the San Francisco DPW and DPT).

The information gained through this process used to develop a vision, principles and objectives for San Francisco Countywide Transportation Plan by considering it in terms of the five city themes (livable city, regional city, economically thriving city, sustainable city and equitable city). The vision and principles are presented in Exhibit 4-2.

Exhibit 4-1
Summary of Neighborhood Subareas Comments

	Bayview / Hunters Point	Excelsior / OMI	West of Twin Peaks	SOMA / NEMIZ	Richmond / Seacliff	Sunset / Parkside / Lakeshore	Potrero / Mission Bay	Western Addition / Haight / Hayes Valley	Tenderloin / Civic Center	Mission / Noe Valley / Bernal Heights	Marina / Cow Hollow	Chinatown / North Beach
Traffic												
Improve traffic control devices		x	x		x							
Improve signage / information systems		x		x		x				x		
Better enforcement	x	x	x	x		x		x	x	x	x	x
Parking												
Better enforcement			x		x	x	x	x	x	x	x	x
Provide additional parking		x	x	x		x	x		x	x		x
Transit												
Add / modify MUNI routes	x	x	x	x	x	x	x	x	x	x	x	x
Create new MUNI light rail lines		x	x		x			x		x	x	x
Improve MUNI station and bus stop facilities		x	x			x	x	x	x	x	x	
Procure better MUNI equipment and improve maintainence				x	x			x	x	x		x
Provide more frequent MUNI service	x		x	x	x			x	x	x	x	x
Improve MUNI driver / attendant performance				x	x	x	x		x		x	
Relocate Caltrain stations	x						x					
Extend Caltrain to Market Street or Transbay Terminal				x				x			x	x
Create new BART stations		x							x	x		
Improve BART station facilities		x				x			x	x		
Expand regional bus services (GGT, Samtrans)	x	x		x					x	x	x	
Increase ferry service	x			x					x		x	x
Install transit-priority traffic control devices			x	x		x				x		
Expand HOV / transit lanes				x		x					x	
Create tourist destination shuttles					x				x		x	
Improve coordination between transit agencies			x	x			x		x	x	x	x
Pedestrians												
Implement traffic calming measures		x	x		x	x				x	x	x
Improve / create sidewalks	x		x	x	x		x	x	x			
Enforce parking prohibitions on sidewalks and crosswalks								x		x		x
Improve / add pedestrian signals	x		x	x		x		x	x	x	x	x
Bicycles												
Add / improve bicycle lanes and trails	x	x		x	x	x	x	x	x		x	
Allow bicycles on transit vehicles	x	x							x	x		
Others												
Improve taxi service / increase taxi supply	x	x	x	x				x	x	x	x	x
Improve weekend conditions (traffic, transit)				x	x	x					x	x
Allow for alternate modes (jitneys, dial-a-ride)			x	x		x			x	x		x
Limit delivery times				x		x		x			x	
Reduce noise and pollution		x			x		x		x	x	x	x
Improve streetscape, especially for pedestrians		x	x	x	x		x					
Close Market Street to vehicular traffic				x		x			x			
Coordinate transportation systems and land uses	x			x		x				x		x

EXHIBIT 4-2
VISION AND PRINCIPLES

VISION

San Francisco's transportation system shall be safe, efficient, equitable, and environmentally sustainable and contribute to improving the city's economy while protecting its celebrated quality of life.

PRINCIPLES

1. We and our visitors should be able to travel around the City without using a car.
2. While San Francisco's transportation system should emphasize use of alternatives to the single occupant automobile, we should be able to use a car when transit or automobile alternatives are not available.
3. Our streets should be safe and pleasant to walk and bicycle upon.
4. Our neighborhoods should be livable and protected from the negative impacts of transportation including noise, air pollution and traffic congestion.
5. Our regional transit system should be convenient enough to attract the majority of trips made by local visitors to San Francisco and trips made by San Franciscans travelling outside the City.
6. Our local and regional transit systems should be given priority in conflicts with private transportation.
7. Our city departments and regional agencies should work together to solve transportation problems and coordinate impacts of land use development on the transportation system.
8. Our transportation system should serve all neighborhoods and populations equitably including the economically disadvantaged, children, elderly and disabled.
9. Our transportation system should serve changing lifestyles and ways of doing business, especially changes in goods distribution and changes caused by use of information technology.
10. Solving transportation problems in a city as complex and diverse as San Francisco will require citizens and businesses to develop sub-area and multi-modal corridor plans that address transportation, land use, economic development and other issues comprehensively.

It is important to note that the principles in Exhibit 4-2 are not prioritized. Furthermore, some of the principles could be viewed as being in conflict with each other when considered on a project by project basis. In other words, a project that was fully consistent with one principle might be inconsistent with another principle.

OBJECTIVES

The primary goal of any plan is to achieve the plan's vision and principles. The question is how do we know when we have accomplished this – and more importantly, how do we tell if we are making progress in the right direction? To answer this question we must develop a set of objectives that can assist us in decision making and mark our progress. A good objective is one that can be easily understood and measured. It is important that people can understand and see that the objective is related to the overall goal – it should be logical.

The San Francisco Countywide Transportation Plan includes objectives that use measures of effectiveness to describe how well the City's transportation system is meeting the vision and principles set forth above. Some of the measures will be obtained from San Francisco's Congestion Management Plan (CMP). All counties in California are required to prepare a CMP that includes data on operation of the county's multimodal transportation network. For example, travel speed on selected roadways is one of the measures of effectiveness. Using these measures will assist the City in assessing the Plan's success since the CMP data is updated every two years.

Other data has been collected from a variety of sources and is intended to capture the wider impacts of transportation beyond operation of the transportation network itself. These measures include annual Muni ridership, parking utilization in downtown garages, ability for welfare-to-work recipients to access jobs, accident data, and mode split data.

Exhibit 4-3 lists the objectives and the measures that will be used to assess whether San Francisco is moving towards achieving those objectives. The principles that the objectives and measures address are also indicated.

EXHIBIT 4-3
TRANSPORTATION OBJECTIVES AND MEASURES

OBJECTIVE	MEASURE	
Reduce/maintain travel times within San Francisco	Average AM peak period travel time by mode (transit and auto)	1, 2, 4, 6, 9
Reduce/maintain travel times between San Francisco and surrounding counties	Average AM peak period travel time by mode (transit and auto)	2, 4, 5, 9
Increase Muni transit ridership	Annual Muni ridership (adjusted for population growth)	1, 4, 5, 6
Increase regional transit ridership into and out of San Francisco	Mode split at county lines (traffic volume versus transit ridership)	1, 4, 5, 6
Provide easily accessible transit service	Percent of San Francisco population within ¼ mile of a transit stop with 8 minute minimum headway	1, 4, 5, 8
Provide easily accessible regional transit service	Percent of San Francisco population able to access regional transit stops within 20 minute travel time and no transfer.	1, 4, 5, 8
Increase Muni transit service reliability	Percent of Muni transit trips provided on-time; and consistent headway maintenance.	1, 4, 5, 6
Increase transit service reliability	Percent of regional transit trips provided on-time	1, 4, 5, 6
Increase bicycling and walking as a means of trip making	Percent of daily total person trips taken on bike and walked	3, 4
Reduce accidents within San Francisco	Number of accidents/average daily traffic at intersections	3
Implement transit preferential streets program.	Percent of transit operated in transit lanes; number of traffic signal pre-empts.	1
Improve viability of transit and alternative forms of transportation for making trips.	Reduction in household vehicle ownership; average daily car traffic on screenlines.	1
Improve transportation planning coordination and project delivery	Number of center and corridor plans completed and percent projects implemented	7, 10

Chapter 5
PLAN APPROACH

The Transportation Plan's vision is that San Francisco's transportation system shall be safe, efficient, equitable, environmentally sustainable and contribute to improving the city's economy while protecting its celebrated quality of life. This chapter describes the approach used to develop the actions proposed for attaining this vision.

This chapter consists of three sections that provide a foundation for understanding the plan. These sections are:

- plan strategies,
- plan actions and programs, and
- on-going planning efforts.

The intent of the San Francisco County Transportation Authority is that the Plan will be revised on a regular basis. Furthermore, the Plan recommends that additional planning be completed in the coming years to fully develop projects for implementation. In a sense, this Countywide Transportation Plan is only the beginning of the effort to solve San Francisco's transportation problems.

COUNTYWIDE PLAN STRATEGIES

The San Francisco Countywide Transportation Plan recommends implementing four strategies to achieve the Plan's vision and principles. The strategies each include numerous actions and projects designed to improve transportation conditions in the City. Strategies 1 and 2 consist of actions under the direct control of San Francisco. Strategy 3 consists of actions under the control of regional agencies but where San Francisco may have significant policy representation. Strategy 4 consists of long-term actions that will require additional detailed analysis before they could be implemented.

It is important to emphasize that the Plan recommends implementing all four strategies. The strategies are not alternatives, but rather four parts of a unified approach to achieving the vision of a safe, efficient, equitable, and environmentally sustainable transportation system. The four strategies are:

- Strategy 1: Maintain and Sustain the Existing System – This strategy includes the actions necessary to keep the existing San Francisco transportation system operating including replacing Muni vehicles, resurfacing streets and funding San Francisco's paratransit program.
- Strategy 2: San Francisco Corridors and Activity Centers – This strategy consists of an extension of the Third Street Light Rail Corridor to Chinatown (Central Subway project),

increased Muni transit service, and a program of improvements to the city's major travel corridors and activity centers. This strategy is almost fully funded given projected revenues and assuming extension of the transportation sales tax.

- Strategy 3: System Expansion – This strategy consists of major expansion projects on the regional transportation network. Many of these actions serve important San Francisco needs but are under the control of a regional agency or board. A significant problem identified in the plan is the lack of funding for projects in this strategy.
- Strategy 4: Market Based and Innovative Actions – This strategy consists of a set of market based and innovative actions. Most of these actions are designed to be self-funding by using a market-based approach to transportation. Many of these actions will require detailed study and some demonstration efforts before a decision can be made on their implementation.

Chapters Six through Nine describe the strategies. Each chapter describes a single strategy. The chapters also summarize the funding program proposed for the strategy, the impacts that the strategy has on future transportation conditions and key issues surrounding implementation of the strategy. Chapter Ten summarizes the Plan's overall financial program.

ACTION AND PROGRAM DEFINITION

Each strategy contains a number of actions and programs. Actions include capital projects, operating programs, policy changes, land-use planning and market-based transportation improvements. The actions are grouped into 'programs' of similar actions (i.e., all actions impacting the Municipal). The ten programs are:

- Muni Transit
- Regional Transit
- San Francisco Paratransit Program
- San Francisco Streets and Roads
- Regional Highways
- Bicycle Program
- Pedestrian Program
- Safety Program
- Goods Movement Program
- Countywide Transportation Management and Planning

The Transportation Plan recommends specific actions in each of these programs and ways for the actions to be implemented in a coordinated and comprehensive manner. City departments and regional agencies provided descriptions of and cost estimates for many of the recommended actions. In some cases specific small projects were combined into programs, since these

programs were more efficient ways of considering small projects in the larger context of a long term plan.

A good example is the recommended bicycle program. A well-developed bicycle network in San Francisco will improve transportation conditions by enabling people to bike rather than drive for some trips. The impacts of these projects will be felt most at the local or neighborhood level and then especially when implemented with complementary land use and other policy actions. It would be impossible to develop such a comprehensive and detailed program (i.e., a set of specific improvements and land use changes) and then to analyze that program in the context of a countywide transportation plan. Instead, the San Francisco Countywide Transportation Plan recommends defining these types of actions using an Activity Center planning program and a Corridor planning program (described below). These plans would be developed by appropriate city departments working together to identify actions to improve the transportation system in an activity center or corridor.

In addition to describing specific actions and programs, the Countywide Transportation Plan describes how actions would be implemented. In most cases the Transportation Authority's goal is to facilitate implementation of actions by City Departments and regional agencies. The actions would be implemented by the appropriate department or agency.

For example, the Transportation Authority has no direct responsibility for land use planning. However, this plan does recommend programs that will enable the San Francisco Planning Department to improve its ability to plan land uses and implement joint land use and transportation improvements especially as part of the activity center planning effort described below.

ONGOING PLANNING EFFORTS

San Francisco's transportation needs are changing rapidly and new ideas are being developed for addressing transportation problems. Under these conditions, one of the most important aspects of the San Francisco Countywide Transportation Plan is that it acknowledges and anticipates that transportation planning must continue following completion of the plan itself.

In addition to regular updates of the Countywide Transportation Plan, the Plan recommends that two specific types of planning be completed during the coming years: corridor planning and activity center planning. The goal of these planning efforts is three-fold: first, to identify specific actions for implementation; second, to improve planning of major investment projects; and finally, to provide the foundation for the regular updates of this countywide transportation plan. Activity center planning and corridor planning are outlined below.

Activity Center Studies

Activity center planning is based on the notion that San Francisco is a city of neighborhoods. Building on this idea, the Countywide Transportation Plan recommends that transportation-oriented plans be developed for all types of 'activity centers': residential, commercial, cultural,

educational, and/or employment – throughout the city. Each activity center has its own transportation needs and so solutions would be tailored to meet those needs.

From the perspective of transportation, these plans will have two important parts. First, they will consider the impacts of land use changes on transportation and the demand for new transportation facilities. This will enable planners to recommend land use changes like increasing housing on corridors where a majority of trips will be made by transit. Second, they will provide an opportunity to examine the area's fine-grained transportation network. This process will identify improvements to the pedestrian, bicycle, transit and vehicle networks within the activity center.

In most transportation plans these types of actions are either too small to estimate the benefits of or beyond the study definition and therefore they are neglected and yet they are many times the most cost effective investments to make. The Activity Center Planning Program provides a means for identifying these small-scale improvements and incentives for considering land use changes in the transportation planning process.

The Planning Department and the Redevelopment Agency will lead the effort to prepare activity center plans, but their success will depend on a multi-disciplinary approach including other city departments such as the DPT, DPW and Muni. In some activity centers regional agencies like BART or Caltrain will be involved. The San Francisco Planning Department has started preparation of these plans in its Transportation Comprehensive Urban Plan (T-CUP) effort. Three T-CUP plans are currently being prepared: Octavia/Market, Central Waterfront and Balboa Park.

The activity center planning process will be a public process. Residents will help determine what improvements will be made in their neighborhoods, businesses will help decide how to unclog commercial streets, and children could be called on to help design programs that make streets safe for walking and bike riding. Successful implementation of these types of actions will require community involvement. These plans will also give the city an ability to address issues such as tour bus route planning in a more analytical way than has been possible to date.

A key tool that will make this type of planning and fine-grained analysis possible is the new San Francisco Transportation Model. This model represents a significant advancement in the art of transportation modeling. The model enables planners to examine the impacts of very small changes on a wider variety of transportation conditions. For example, it will be able to evaluate the impacts of small scale traffic calming improvements or changes to bus routes; importantly it will be able to evaluate these impacts in terms of traditional automobile-oriented measures like vehicle congestion but also in terms of human-oriented measures like pedestrian travel times.

Activity center plans would be prepared in activity centers throughout the city and would serve as Specific Plans for the area. Their preparation would be prioritized based on transportation needs (areas with major transportation problems or development possibilities would have first priority) and (re)development potential. The San Francisco Planning Department will attempt to make these studies self-financing by collecting fees from development that occurs following

completion of the Specific Plan and its environmental analysis although the Transportation Plan recommends that funding be provided up-front (from a variety of sources) for these studies.

Corridor Planning

Transportation corridors are critical to the functioning of our city. Corridors are arterial streets, major transit lines, bike routes, and pedestrian paths. Of course streets, transit, and sidewalks also exist in our activity centers, but those that fit the definition of a corridor generally link activity centers and/or connect to transportation facilities in other counties. Two types of corridor studies are recommended in the Countywide Transportation Plan: Rail Transit Corridors and Transit Preferential Street Corridors. Both are outlined below.

Rail Transit Corridors

Rail transit corridor planning is critical to the long range transportation planning in San Francisco. It takes ten to fifteen years of progressively more detailed planning and engineering to construct a major new rail transit line. In addition to this planning and engineering effort, the cost of these major investments requires that significant political efforts be made to secure regional, state and federal funds to complete the projects. Given this reality, it is critical to complete strategic planning efforts that identify candidate rail corridor projects and, once a project is selected, to focus on completing that project. Changing priorities or losing focus loses significant time and money.

Background: Four Corridor Plan – The San Francisco County Transportation Authority and San Francisco Municipal Railway adopted the Four Corridor Plan for rail transit improvements in 1995. This plan evaluated and prioritized the four corridors identified in the San Francisco Transportation Sales Tax Expenditure Plan (Third Street/Bayshore, Geary, Chinatown/North Beach and Van Ness Avenue). The Four Corridor Plan recommended a $2 billion (1995 dollars) new core subway and rail infrastructure system that maximized connectivity and travel time savings in all four corridors. The plan recommended a phased approach to achieving this vision.

The first phase of this plan is the Third Street Light Rail Project. Environmental planning and preliminary engineering have been completed for this project and final design is due to begin later in 2000. Service is expected to begin operation in 2004.

The second phase of the plan is the Geary Corridor. As part of the Third Street Light Rail Project planning an idea to link the Third Street line to the Central Subway was evaluated and found to present a highly desirable opportunity. The Central Subway would serve as both the Union Square portion of the Geary Corridor and provide fast and reliable connections between the Financial District/ Market Street transit corridor and SoMa/Caltrain/Mission Bay and Bayview Hunters Point. Given this project's significant benefits and ability to serve three of the four corridors, it was included in the environmental and preliminary engineering completed for the Third Street Light Rail Project and has been included in the Bay Area's most recent Regional Transportation Program (where funding from state and federal sources are programmed).

In addition to the planning for the Central Subway portion of the Geary Corridor project, a systems level analysis of Geary corridor service was prepared by Muni in 1997. Muni's governing board has chosen a preferred light rail alternative and alignment for the Geary

Corridor. These policy decisions and planning efforts remain the basis for the next phase of action on the Geary Corridor.

No significant planning analyses have been completed for the North Beach and Van Ness corridors, the Four Corridor Plan's third and fourth priorities respectively.

Future Rail Transit Corridor Planning – The Four Corridor Plan has served as an excellent guide to identifying and prioritizing major rail transit corridor projects in San Francisco over the last five years. The fruits of this strategic plan are now coming to bear with final design for the Third Street Light Rail Project beginning and strong political support for construction funding of the Central Subway project. This suggests that San Francisco must continue the process of evaluating projects and moving them through the environmental planning and engineering studies phase while building a political constituency for their funding.

The Countywide Transportation Plan recommends a two-phase strategy for moving forward with strategic planning of future rail transit corridor projects. Phase 1 consists of continued planning for the Geary Corridor service. This effort will be focused on developing a project that can meet the financial constraints of transit funding programs, perhaps by identifying a phased project or new sources of funding. Phase 2 consists of developing systems level data on a series of additional rail corridors that have been suggested by the public and agencies since the Four Corridor Plan was adopted. This phased approach would allow San Francisco to proceed with work in the corridors already identified, while we develop new corridors on a separate but parallel track, but one that does not hold up work that has already begun.

The Phase 2 analysis would be intended to identify opportunities for implementing low cost and/ or highly efficient (for example connections between systems) types of projects. The Countywide Transportation Plan recommends preparing a plan that outlines the following types of information for future transit corridors:

- Project description
- Ridership potential
- Capital cost
- Operating issues and costs
- Coordination opportunities with other transit operators
- Funding opportunities
- Land use coordination opportunities

Using this information a more detailed analysis could be prepared for the corridors that provide the highest level of benefits. This more detailed plan would be similar to the Four Corridor Plan and would be intended to set forth the strategic direction for future transit corridor planning in San Francisco. The following corridors were identified by the public and government agencies in developing the Countywide Transportation Plan for consideration in this effort:

- North Beach Corridor
- Van Ness Corridor

- Geneva Avenue Extension Corridor (Balboa Park to Bayshore Caltrain and 3-Com Park)
- G-Line Corridor (Extension of historic streetcar service to Golden Gate Park Concourse)
- Fisherman's Wharf to Presidio Corridor
- N-Line UCSF Shuttle (Parnassus to Mission Bay Campus via 16th Street)
- Cable Car corridors

An important part of the Phase 2 effort will be identifying funding opportunities for projects. For example there may be a low cost project with a unique funding opportunity available, in this case that project might be recommended for implementation ahead of another project that had more 'transportation' benefits.

The Phase 1 planning effort will be led by Muni as part of the program to implement the Geary Corridor project. The Phase 2 effort will be a joint effort between Muni and the Transportation Authority.

Transit Preferential Street Corridors

Perhaps the most important transportation policy in San Francisco is the Transit First Policy. This policy was adopted by the Board of Supervisors in 1973 and has recently been reaffirmed by the public as part of the Muni reorganization proposal overwhelmingly approved by the voters in November 1999.

The November 1999 voter approved proposal added the following principles to the San Francisco City Charter:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.

2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.

3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.

4. Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.

5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.

6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.

7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.

8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.

9. The ability of the City and County to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable regional public transportation system.

10. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway.

In order to implement these principles, the San Francisco Countywide Transportation Plan recommends that the existing transit preferential streets planning program be expanded to include a more multi-modal approach to moving forward with constructing a system of transit preferential corridors throughout San Francisco.

Transit corridors are especially important because surface buses carry over 60 percent of Muni ridership and also carry a significant number of trips from the North and South bays (East bay bus service currently does not use surface streets in San Francisco). Furthermore, the MTC is considering expansion of the surface bus network by implementing a regional express bus strategy that makes use of bus rapid transit concepts developed in other regions and countries (e.g., Curitiba Brazil). The transit preferential street corridors program is designed to improve surface bus transportation.

The Transit Preferential Street Corridors program would be completed by city departments and regional agencies. Similar to the Rail Transit Corridor Planning effort it would utilize a phased approach to planning. Phase 1 would compare potential corridors and prioritize corridors for a more detailed Phase 2 planning effort.

San Francisco's existing transit preferential streets program provides valuable insight into the importance of multiple city departments working closely together to implement transit preferential improvements. Often what appear to be very small changes have very significant benefits to transit, but also require very detailed planning to implement the identified projects. Therefore, the proposed planning process will utilize a multi-department approach. Also, there are potentially significant benefits to other regional transit operators that provide service in San Francisco; where appropriate, these operators will be involved in the planning effort.

Phase 1 of the Transit Priority Street Corridor planning would identify opportunities for implementing transit priority improvements on San Francisco's most important transit corridors. The objective would be to prioritize corridors for the more detailed planning efforts (all corridors would eventually be evaluated). The following criteria would be evaluated in the Phase 1 analysis:

- Corridor ridership potential
- Potential improvement capital costs
- Operating issues and costs
- Coordination opportunities with other transit operators
- Coordination with traffic signal, bicycle and pedestrian improvement programs
- Funding opportunities
- Land use coordination opportunities

An important element of the prioritization will be the ability to coordinate with other programs including bicycle programs, pedestrian programs, goods movement programs, and traffic signal improvement programs. The idea is that a multi-modal approach would be taken to improve all types of transportation within the corridor all focused on improving transit and alternative transportation strategies. The following corridors would be considered in the Phase 1 analysis:

- Van Ness Avenue
- Geary Boulevard
- Stockton Street
- Columbus Avenue
- Pine – Bush – California
- Fell – Oak – Lincoln – Fulton
- 19th Avenue – Park Presidio
- Geneva Avenue
- Mission Street
- Market Street
- Lombard Street

Finally, an important part of the Phase 1 analysis would be consideration of city-wide systems that will be necessary to fully implement the transit priority streets corridors. Such systems could include an integrated traffic signal control system and Muni operations systems (e.g., vehicle positioning systems and dispatching center). Another important citywide aspect of the program is developing methods for the Planning Department to improve land use planning on transit preferential streets to optimize the benefits of transportation investments and maximize the opportunities for synergy. The Transportation Authority would coordinate the Phase 1 analysis with the assistance of the affected city departments and regional transit agencies.

Phase 2 of the Transit Preferential Streets Corridors planning would be development of detailed improvement plans for particular corridors (following the prioritization developed in Phase 1). These plans would be multimodal and include programs designed to implement roadway, transit, bicycle, traffic signal, goods movement, and pedestrian improvements at the same time to reduce costs and disruption to the public. The Phase 2 planning would be completed by City Departments and regional transit agencies as appropriate for the particular corridor under evaluation.

INTEGRATED PLANNING APPROACH

The San Francisco approach is to combine corridor and activity center planning by enabling the two processes to influence each other. The specific goal for San Francisco's corridor planning effort is to provide convenient connections ***between*** activity centers for people, goods, and services by ***all*** modes of travel: motor vehicle, transit, bike and foot. The specific goal of the activity center planning effort is to improve transportation ***within*** the activity center (and its linkage to nearby corridors) while improving the activity center's environment, economy and equity.

The most interesting part of this approach is how these two types of planning processes will be used to influence each other. Specifically, the activity center planning effort will direct input into planning for the corridors adjoining or passing through the activity centers – while the corridor planning effort will foster consideration of transportation changes at the activity center level.

An example of this type of integrated planning process could be Van Ness Avenue. Van Ness Avenue carries regional traffic to the Golden Gate Bridge and serves as an important arterial for city traffic. It also is a critical transit route, and carries high pedestrian and bike volumes. Van Ness is clearly an important transportation corridor. However, the street also adjoins several residential and commercial neighborhoods as well as being a neighborhood in itself.

A corridor plan for Van Ness Avenue would seek to develop improvements for all travel modes along the street, but also would utilize recommendations from activity center plans in adjoining areas to refine the improvements. For example means of improving traffic flow on Van Ness Avenue could be accompanied by traffic calming in adjoining neighborhoods. Building transit priority lanes in the median could be combined with pedestrian safety improvements. Reducing street parking on Van Ness Avenue could mean replacing it in garages or with more efficient parking on side streets. Bicycle lanes on Polk Street could provide high quality bicycle facility in the corridor. These examples are intended to explain the process that would be used, rather than to propose any specific project.

In summary, the San Francisco Countywide Transportation Plan recommends that a series of more detailed transportation planning efforts be completed in the coming years to identify specific actions for implementation. These Activity Center studies and Corridor studies would be designed to address the specific transportation needs of the city's neighborhoods and transportation facilities.

Chapter 6
MAINTAIN AND SUSTAIN EXISTING SYSTEM

This chapter presents Strategy 1 of the San Francisco Countywide Transportation Plan. Strategy 1 focuses on maintaining and sustaining San Francisco's existing transportation system. For this strategy, continuation of existing federal, state and local funding programs and reauthorization of San Francisco's half-cent sales tax for transportation is assumed to fund the majority of the transportation programs.

The chapter is divided into two sections, the first section describes the actions that would be accomplished in the strategy and the second describes financial assumptions for the strategy. The impact of this strategy on transportation conditions in San Francisco is outlined in Chapter 3 – the future baseline transportation analysis assumes that we will continue to maintain and operate the existing transportation system. This is important to understand because most of the transportation funding expected to be available in the coming years is needed to simply keep the existing transportation system operating without which transportation conditions would deteriorate significantly. New actions are described in the following chapters which describe Strategies 2, 3 and 4. The plan recommends implementing all four strategies.

ACTION DEFINITION

The Maintain and Sustain Strategy consists of a set of actions developed during the Countywide Transportation Plan's public outreach process and by working with city departments as well as regional transportation agencies. The actions are listed in ten programs based on mode and implementation responsibility. The major actions and programs are outlined below and summarized in Exhibit 6-1.

Note that the actions in the Maintain and Sustain Strategy would be carried out over a thirty-year period that encompasses the existing half-cent transportation sales tax program and the potential future program. The transportation analysis covers a twenty-year period since that is as far into the future that can be evaluated with a transportation model and demographic projections to any reasonable degree of certainty.

Exhibit 6-1 Strategy 1: Maintain and Sustain the Existing System Program and Project Expenditures for the 30-Year Period, FY 01-31		
Action Category	**$, millions**	**% Total**
San Francisco Transit	$3,806.0	67.9%
Regional Transit	TBD	TBD
San Francisco Paratransit Program	387.9	6.9%
San Francisco Streets and Roads Program	1,327.5	23.7%
Regional Highways	TBD	TBD
Bicycle Program	2.3	0%
Pedestrian Program	44.1	0.8%
Safety Program	--	--
Goods Movement Program	--	--
Countywide Transportation Management and Planning	34.7	0.6%
TOTAL, Expenditures	**$5,602.5**	**100.0%**

Notes:
In Strategy 1 the Safety Program is incorporated into the other programs.
Goods Movement is addressed in the Regional Transit and Regional Highways categories.

San Francisco Municipal Railway Transit

San Francisco has adopted a Transit First policy and improving the San Francisco Municipal Railway is a key priority for the Transportation Plan. Like any large business, the Muni has very significant capital rehabilitation and replacement needs that must be met in a timely manner or system operations will deteriorate. In the Maintain and Sustain Strategy, Muni's rehabilitation and replacement needs are funded. These needs are subdivided into three categories: fleet, infrastructure, and facilities/equipment. Actions in each of the categories are described below.

Muni Fleet Program -- Muni has a fleet of over 1,000 vehicles of many types and sizes. Keeping this fleet operating in good condition has a very significant impact on the ability to provide service and to attract customers to the system.

- **Replacement** – Until recently, Muni's fleet was largely beyond its useful life. Over the last several years Muni has successfully started replacing vehicles and improving service, but these new vehicles will need to be replaced on a regular basis. Planned replacements for accessible (paratransit) vans, light rail vehicles, motor coaches, and trolley coaches are included in this program. Approximately $1.5 billion will be spent on fleet replacement during the next thirty years.
- **Rebuild and Rehabilitation** – In 2002, Muni's average fleet age will be the lowest it has been in many years due to the replacement of most of its revenue vehicles in the period from 1997 to 2002. A schedule of mid-life rebuild and rehabilitation projects is included in this strategy to improve service reliability, reduce maintenance requirements, and to extend the useful life of vehicles so phased replacement cycles can be implemented.

Historic streetcars and cable cars will be rehabilitated under this program. The total cost for Muni's vehicle re-build and rehabilitation will be $315 million for the thirty-year period.

Muni Infrastructure Program – Muni's infrastructure is defined as the track, power distribution systems and control systems for rail, cable cars and trolley buses. All of these systems must be regularly maintained and replaced. The following actions are included in this program:

- **Overhead Rehabilitation and Rail Replacement** – These programs include the phased design and replacement of the overhead wires and related traction power systems and replacement of the trackway and related systems serving the light rail and trolley coach lines.
- **Cable Car Infrastructure Rehabilitation and Replacement** – This program includes the repair and replacement of all street components of the cable car system, exclusive of the rail and vehicles.
- **Third Street Light Rail Transit Corridor Track and Vehicles** – This project is the first phase (Initial Operating Segment) of the Third Street LRT project, for which trackway and related facilities will be constructed and 15 light rail vehicles will be purchased.

Muni Facilities and Equipment Program – Muni facilities include stations, maintenance facilities and support facilities. Equipment includes non-revenue vehicles and equipment used for maintaining vehicles. The following actions are included in this program:

- **Major Rehabilitation Projects** - at Muni operating divisions, support facilities, and administrative facilities.
- **Construct Replacement Facilities** – for the revenue center, training center, central control (including radio/automatic vehicle location system), central warehouse, and headquarters building.
- **Subway Station Rehabilitation** – rehabilitate the nine Muni subway stations.
- **Facility Preservation/Improvement Program** – includes a variety of projects to provide structural, ventilation and other improvements to Muni's existing operating, storage, maintenance and administration facilities.
- **Metro East Light Rail Vehicle Facility** – Development of a new LRV maintenance facility to accommodate the growth in the LRV fleets for the Third Street service.
- **Replacement of Non-Revenue Vehicles and Equipment.**

Regional Transit

San Francisco is highly dependent on the region's transit systems both to bring residents of other counties into the city and to take our residents out of the city for work, cultural and recreational opportunities. San Francisco by virtue of its location and history was the original hub for the

region's transit systems, but that role is changing as many transit trips are being made between suburban regions – even trips through San Francisco.

While regional transit has always been important to San Francisco, the city has not always been as actively involved in setting the regional transit agenda and participating in funding its share of regional transit operations. This is changing as San Francisco has recognized that changing travel demand patterns require that actions be taken to rationalize the Bay Area's sometimes disconnected regional transit system.

During the next twenty years San Francisco will continue to increase its involvement in regional transit planning by taking the following actions:

- **Regional Transit Rehabilitation Programs** – San Francisco will continue to participate in funding its share for rehabilitation of major transit systems that serve the City including BART, Caltrain and Golden Gate Transit ferries. Due to the extremely high cost of this program it is not fully funded, additional programming and project definition will be necessary to accomplish the program (see Strategy 3 for more details). The following two specific projects are included in this program:
    - **BART System Rehabilitation** – BART has identified approximately $255 million worth of rehabilitation projects. These include new fare collection equipment, elevators and escalators, station rehabilitation, seismic retrofit, and major facility rehabilitation. Many of these projects are currently unfunded. BART is currently preparing a more detailed assessment of these rehabilitation needs and developing a proposal for the San Francisco share.
    - **Caltrain Rapid Rail Rehabilitation** – Caltrain has identified a need for $402 million for rehabilitation of its system. San Francisco's share of this program is approximately $34 million. This program will rebuild Caltrain tracks and replace the old signal system. The eight-year program is currently underway, but will require funding from San Francisco in the coming years.
- **Regional Transit Fare and Schedule Coordination** – San Francisco will continue to participate in the schedule and fare coordination programs developed by the Metropolitan Transportation Commission. It is expected that $51.5 million will be spent on the Translink program in the next twenty years (these funds are provided by MTC 'off the top' of the regional funding programs).

San Francisco Paratransit Program

San Francisco has an extremely successful paratransit program designed to provide customized transportation serve to meet special needs of the disabled. This program is funded from a variety of sources including a substantial commitment of funds from the city's transportation sales tax program. In the next thirty years approximately $388 million will be spent on this program. Approximately $185 million (48 percent) of this would come from the sales tax program.

Local Streets and Roads Program

Streets provide the backbone of the city's transportation system, they are used by drivers, transit, freight and bikes. In addition to the streets themselves this category includes traffic signals,

street trees, parking, and traffic management programs. In the case of the streets most of the work necessary over the next twenty years consists of repairs and rehabilitation. The other categories are more balanced between maintenance and implementing new systems. The following actions will be implemented in this program:

- **Street Rehabilitation** – Local streets will be rehabilitated following the regional pavement management system. This system is designed to maintain roadways in the most efficient manner possible using computerized programs to calculate the optimum time to make improvements. In the next thirty years approximately $909 million is needed for ongoing street resurfacing and to address the backlog of street resurfacing needs. Approximately $404 million (44 percent) of the needed funds would come from the remaining half-cent sales tax program and its reauthorization. This program is not fully funded in Strategy 1 due to the high magnitude of costs.
- **Coordinated Construction Program** – The city will improve implementation of its program designed to ensure that all utility work that requires digging up streets is coordinated to minimize disruption and improve street quality.
- **Traffic Signals and Control Devices** – The traffic signal program will renovate and add new traffic signals to increase safety and improve operations. The program also includes the first phase of an Integrated Transportation Management System, a city-wide real-time transportation management system designed to improve traffic flows and reduce congestion. In the next thirty years approximately $238 million is needed for this program. Approximately $116 million (49 percent) of this would come from the existing half-cent sales tax program and its reauthorization. This program is projected to have a shortfall of approximately $116 million.
- **Street Trees** – San Francisco will continue its successful program of planting and maintaining street trees throughout the city. In the next thirty years approximately $60 million will be spent on this program. Approximately $32 million (53 percent) of the funding would come from the half cent sales tax program and its reauthorization.

Regional Highways Program

San Francisco is served by several major regional freeways. During the next twenty years there will be four significant highway projects completed. These projects will be funded using federal, state and regional funding sources. The projects are:

- **Doyle Drive Replacement** – The existing Doyle Drive would be replaced with a new roadway that meets current structural codes and safety standards. This new roadway would be sensitive to the environmental conditions in the Presidio National Park as well as provide improved access to the Presidio and reduced traffic impacts in surrounding neighborhoods. The new facility will improve transit connections but not increase vehicle capacity. An environmental and preliminary engineering study is currently being completed. One of the most important parts of the study is developing a financial program for implementation of this project.
- **Golden Gate Bridge Seismic Rehabilitation** – The Golden Gate Bridge is being seismically retrofitted to withstand future earthquakes. This three-phase construction

project is in its second phase, and has a $218 million construction budget. At present, bridge toll revenues and federal TEA 21 revenues are the primary sources of funds for the seismic retrofit. However, about $117 million in additional funding will be needed to complete the project, and all funding options are being pursued by the Golden Gate Bridge, Highway, and Transportation District.

- **San Francisco Oakland Bay Bridge Seismic Retrofit** – This project is to retrofit the Bay Bridge to current seismic safety standards and to provide post-earthquake "lifeline" service. The retrofit strategy is broken down into six major components: East span interim retrofit, West approach, West span, West viaduct on Yerba Buena Island, Yerba Buena Island tunnel, and replacement of the East Span. The West approach is bounded by 5th Street and the cable anchorage structure in San Francisco and is scheduled for completion in 2004. This $210 million project is fully funded. The West span encompasses the suspension bridge between the San Francisco and Yerba Buena Island anchorage structures. This project is estimated to cost $350 million and is fully funded. The Eastern Span replacement project is currently under design and is estimated to cost $1.5 billion.
- **Central Freeway – Octavia Boulevard Project** – The existing Central Freeway will be demolished and replaced with a surface level boulevard north of Market Street and a new touchdown ramp and replacement freeway south of Market Street. This new project will cost approximately $100 million and be funded by a combination of proceeds from land sales in the existing freeway right-of-way, federal Emergency Relief funds and State Highway Operations and Protection Program (SHOPP).

Bicycle Program

San Francisco has an ideal climate for bicycle use. Furthermore, the city's short distances and congested streets make bicycling an excellent alternative form of transportation for many. One of the key reasons preventing more widespread use of bicycles is the lack of bike routes that are perceived to be safe by potential riders.

In the Maintain and Sustain Strategy the existing bicycle program would be continued. This program consists of a relatively small annual capital program and planning effort. (In Strategy 2 the bicycle program is expanded by increasing the amount of funds available for transportation improvements and developing corridor implementation plans – see next chapter.)

- **Bike Improvement Capital Fund** – The bike capital fund will be used to build and implement actions identified in the Bicycle Plan. In the next ten years approximately $2.3 million is needed to continue this program.

Pedestrian Program

In the Maintain and Sustain Strategy the existing pedestrian program would be continued. This program consists of building new curb ramps and replacing old, non-ADA-compliant ramps, and repairing damaged sidewalks to improve safety. For this strategy, a relatively small annual capital program and planning effort are assumed to be in place. (In Strategy 2 the pedestrian program is expanded by increasing the amount of funds available for transportation

improvements, including new programs such as traffic calming and developing Activity Center improvement plans – see next chapter.)

- **Pedestrian Improvement Capital Fund** – The pedestrian capital fund will be used to build specific projects identified in pedestrian planning efforts currently underway in various departments. In the next thirty years approximately $44 million is needed to fund this program. This program is projected to experience a shortfall of approximately $19 million.

Safety Program

In the Maintain and Sustain Strategy the safety program will be implemented as part of existing programs such as the traffic signal program (improved pedestrian crossing information) and sidewalk program. In Strategy 2 the Safety Program is expanded by adding some specific actions and requiring more detailed analysis of safety issues in the preparation of Corridor and Activity Center plans.

Goods Movement

The goods movement category consists of projects that will improve the ability to move goods around the city including delivery and large freight (such as from the Port of San Francisco).

In Scenario 1 there are no specific actions identified for the Goods Movement category. Goods movement will benefit from rehabilitation of the existing system including street resurfacing, traffic signal improvements and transit rehabilitation (keeping the city's transit system operating will reduce congestion on roadways impacting delivery services). New programs designed to assist goods movement are included in Strategies 2, 3 and 4.

Countywide Planning and Operations Program

The Countywide Planning and Operations Program supports implementation of the entire Countywide Transportation Planning effort and on-going programs that are designed to facilitate use of alternative transportation. This small program consists of two specific actions:

- **Countywide Transportation Planning** – This program consists of preparing and updating San Francisco's Countywide Transportation Plan and participating in transportation planning efforts consistent with the plan. This includes maintaining and improving the San Francisco Transportation Model and providing model analysis services for city departments.
- **Transportation Operations Program** – This program consists of several on-going transportation services to city departments and to the public at large. It helps fund operation of the trip stores in San Francisco BART/Muni stations, the city's alternative commute management services and alternative fuel programs. Much of this work is funded from programs limited to use on these kinds of programs.

FINANCIAL SUMMARY

The total cost to maintain and sustain the existing system for the 30 year period beginning in FY 2001 is estimated to be $5.6 billion (in 2001 $). As indicated in Exhibit 6-1, the largest expenditure, 68 percent of the total cost, is for maintaining the San Francisco Municipal Railway, with the maintenance of San Francisco streets and roads as the next largest expenditure at 24 percent of the total cost. Because the City is served by a mature, comprehensive multi-modal transportation system, a significant investment is required simply to maintain and sustain it.

Exhibit 6-2
Strategy 1: Maintain and Sustain the Existing System
Sources of Funding for the 30-Year Period, FY 01-31

Fund Source	$, millions	% Total
Federal	$1,942.4	41.0%
State	370.1	7.8%
County-wide Sales Tax for Transportation	2,010.2	42.4%
Other Local	416.2	8.8%
TOTAL, Expenditures	**$4,738.9**	**100.0%**
Shortfall – Sources to be Determined (sources less expenditures)	**-$863.6**	--

Notes:
Sources are not included for Regional Transit and Regional Highways in this draft.

The San Francisco Countywide Transportation Plan considers all possible funding sources available for transportation projects. This plan incorporates reauthorization of the San Francisco County Transportation Authority's very successful sales tax for transportation into the financial program in order to provide a more comprehensive view of the overall transportation funding program. The Appendix of this plan presents a preliminary draft of the transportation sales tax reauthorization measure that would be placed before the voters.

Transportation projects are funded from a wide variety of federal, state, regional and local sources. Exhibit 6-2 summarizes the major funding programs and expected funds available to San Francisco during the period from the Year 2001 to 2031. For purposes of developing the financial element of Strategy 1, existing sources of funds were assumed to continue to be available throughout the 30-year period at the rate at which they have historically been available.

Federal sources of funds included in this strategy are used primarily for transit. Examples of these sources are:

- Federal Transit Administration section 5307 and 5309 formula funds
- Surface Transportation Program funds
- Congestion Mitigation and Air Quality funds

- Transportation Enhancements Activities funds

The largest share of funding for this strategy comes from the San Francisco County half-cent sales tax for transportation. Proposition B, approved by the voters in 1989, is a 20-year sales tax which will terminate in FY 2009-10. For purposes of this analysis, the half-cent sales tax is assumed to continue for the 20-year period after FY 2009-10. The "rollover" half-cent sales tax is assumed to grow at the same annual rate of 1 percent currently projected for the existing sales tax. No inflation beyond the real growth of 1 percent annually was calculated for this analysis to keep all costs and revenues in 2001 dollars.

Proposition B is projected to provide $ 635.8 million for the transportation programs and projects in Strategy 1 for the next ten years. Approximately $1.4 billion is assumed to be available for this strategy from the continuation of the half-cent sales tax for transportation for the following twenty years. The total half-cent sales tax revenues projected for use in this strategy $2 billion, or 42 percent of the total funding available.

Other local funds, such as City General Funds, bridge toll revenue, and Transportation Development Act funds are assumed to continue to be available for this strategy. These funds are 9 percent of the total funds available for this strategy.

Comparing the total funds available to the expenditures required to maintain and sustain the existing transportation system results in a projected shortfall of $864 million for the thirty-year period. This shortfall is attributable in large part to the following programs that are not fully funded:

- Muni's facility rehabilitation and replacement program
- Resurfacing of local streets and roads, including the backlog of street resurfacing needs
- Upgrading traffic signals and replacing traffic control devices
- Parking and traffic enforcement, including replacement vehicles
- Pedestrian programs such as sidewalks and curb ramps
- Regional transit system rehabilitation (San Francisco share)

There are two areas where work must be done over the next several years to fully fund this program. The first is that a new funding source must be found to meet some of the shortfall in the streets and roads category (for street resurfacing, traffic signals and traffic control devices, and parking and traffic enforcement), and in the pedestrian projects category. The second is that regional consensus is needed to address the large capital cost and funding demands for major regional transit rehabilitation projects.

The funding issues and financial strategy are discussed further in Chapter 10.

Chapter 7
SAN FRANCISCO CORRIDORS AND ACTIVITY CENTERS

This chapter presents Strategy 2 of the San Francisco Countywide Transportation Plan. Strategy 2 focuses on a series of new initiatives for improving San Francisco's transportation system. This strategy assumes continuation of existing federal, state and local funding programs and reauthorization of San Francisco's half-cent sales tax for transportation.

There are four major initiatives in Strategy 2:

- Extension of the Third Street light rail project in a subway under Market Street into Chinatown;
- Transportation Corridor Improvements including arterial improvements, integrated traffic signal management systems, transit speed-up improvements and bicycle corridor improvements;
- Increased Muni service (additional light rail vehicles and trolley coach extensions);
- Activity Center Improvements including pedestrian safety, traffic calming, bicycle networks, goods movement, parking and land use changes.

The chapter is divided into three sections, the first section describes the actions that would be accomplished in the strategy, the second describes financial assumptions for the strategy and the third analyzes performance of the transportation system with these improvements in place.

ACTION DEFINITION

The San Francisco Corridor and Activity Center Strategy consists of specific actions and modal oriented programs that will be used to fund actions identified in the recommended Activity Center and Corridor planning processes (please see Chapter 5 for more details).

Specific actions in this strategy were developed during the Countywide Transportation Plan's public outreach process and by working with city departments as well as regional agencies. The planning processes will be used to further refine ideas that were raised in the public outreach process. City departments and regional transportation agencies will take the lead in developing the Activity Center and Corridor plans.

The San Francisco Corridor and Activity Center actions are summarized in Exhibit 7-1. The actions are described by program category in more detail below.

Exhibit 7-1 Strategy 2: San Francisco Corridors and Activity Centers Program and Project Expenditures for the 30-Year Period, FY 01-31		
Action Category	**$, millions**	**% Total**
San Francisco Transit	$4,476.2	67.8%
Regional Transit	TBD	TBD
San Francisco Paratransit Program	387.9	5.9%
San Francisco Streets and Roads Program	1,551.0	23.5%
Regional Highways	TBD	TBD
Bicycle Program	52.3	0.8%
Pedestrian Program	104.4	1.6%
Safety Program	--	--
Goods Movement Program	--	--
Countywide Transportation Management and Planning	34.7	0.5%
TOTAL, Expenditures	**$6,606.5**	**100.0%**

Notes:
Safety Program is incorporated in the 7 categories listed above it.
Goods Movement is addressed in the Regional Transit and Regional Highways categories.

San Francisco Municipal Railway Transit

Improving Muni service is critical to improving transportation conditions in San Francisco. Two major expansion programs are included in the San Francisco Activity Center and Corridor strategy, they are:

- **Muni Improvements to the Existing System** – These improvements consist of changes to existing services that are designed to provide additional service, improve service efficiency, and or increase the attractiveness of service. They consist of the following actions:
  - **New Light Rail Vehicles and Historic Streetcars**– Twenty-six new LRVs and 10-15 historic streetcars would be purchased under this strategy to reduce headways on the existing Muni rail lines. Approximately $106 million is needed for this procurement.
  - **Expand the Accessibility Program** – This program would enhance disabled access to the fixed route transit system, beyond the requirements of the Americans with Disabilities Act.
  - **Expand Metro East LRV Operations and Maintenance facility** – This project would expand the capacity of the Metro East facility to handle more LRVs and historic streetcars as they are added to the fleet.
  - **Operator Restrooms** – This project would add new operator restrooms at bus layover locations.
- **Central Subway** – This project is the second phase of the Third Street Light Rail project and extends the Third Street Light Rail line into a new subway under Third Street to

Market, then under Geary to Stockton, and under Stockton to approximately Sacramento. The project cost is estimated at $500 million and funding will be provided from federal New Rail Starts funding, state funding, and $200 million in half-cent sales tax funds from the continuation of the sales tax program or State and regional funding.

- **Rail Transit Corridor Planning** – This program consists of two planning efforts designed to develop more detailed plans for the Geary and North Beach/Chinatown corridors and to complete a preliminary investigation of other corridors identified by the public and agencies in the Countywide Transportation Plan process (e.g. Geneva Corridor, G-Line extension). The preliminary investigation would be designed to identify good opportunities for future funding for these projects. For more details on this planning process please see Chapter 5.
- **Transit Preferential Streets Corridors Planning** – This program consists of a two-phase effort to evaluate transit preferential streets and identify improvements to streets. This planning effort is especially important given the fact that surface street congestion is projected to increase in the coming years, and providing good transit priority will help improve transit service thus drawing more passengers to Muni. In addition to transit, this planning would also address vehicle movement, bicycles and pedestrian improvements. For more details on this planning effort please see Chapter 5.

Regional Transit

No specific actions in this strategy – program is contained in Strategies 1 and 3.

San Francisco Paratransit Program

No specific actions in this strategy – full program is included in Strategy 1.

Local Streets Program

Streets provide the backbone of the city's transportation system; they are used by drivers, transit, freight and bikes. In addition to the streets themselves this category includes traffic signals, street trees, parking and traffic management programs. In the case of the streets most of the work necessary over the next twenty years consists of repairs and rehabilitation. The other categories are more balanced between maintenance and implementing new systems. During the next twenty years San Francisco will improve:

- **New Streets** – New street construction or reconstruction is planned for Illinois Street, Townsend between Fourth and Seventh Streets, and the Mission/South Van Ness underpass. These improvement projects will cost approximately $19 million and are not funded at this time.
- **Traffic Signal Program** – The traffic signal program will add new traffic signals to increase safety and improve operations. The program also includes construction of traffic signal coordination and linking signals together to provide improved traffic flows and prioritization schemes for transit vehicles. In the next thirty years approximately $124 million is needed to fund this program, most of which is unfunded.

Regional Highways Program

No new projects in this strategy – program is included in Strategies 1 and 3.

Bicycle Program

San Francisco has an ideal climate for bicycle use. Furthermore, the city's short distances and congested streets make bicycling an excellent alternative form of transportation for many. One of the key reasons preventing more widespread use of bicycles is the lack of bike routes that are perceived to be safe by potential riders.

The Corridor and Activity Center Actions Strategy would increase the existing bicycle program by including projects developed in the corridor and activity center studies described in Chapter 5. Additional funding is included in Strategy 2 to finance improvements identified in these planning programs. The following bicycle programs are included in this strategy:

- **San Francisco Bicycle Corridors Planning** – The city's existing Bicycle Plan will be updated and revised to include a prioritized plan for improving bike routes in the city's transportation corridors. The Department of Parking and Traffic will be responsible for preparing this plan.
- **Bike Improvement Capital Program** – The bike capital program will be used to build and implement actions identified in the Bicycle Corridors Plan and as part of the multi-modal planning completed in the Transit Preferential Streets Corridor program. Rather than identify specific projects in this countywide transportation plan these projects will be developed in a more fine grained planning analysis completed as part of the Activity Center and Corridor planning process. In the next twenty years approximately $50 million is needed for this program, approximately $25 million (50 percent) would come from reauthorization of the sales tax program.

Pedestrian Program

The Corridor and Activity Center Actions Strategy would increase the existing pedestrian program by including projects developed in the corridor and activity center studies described in Chapter 5. Additional funding is included in Strategy 2 to finance improvements identified in these planning programs. The following pedestrian programs are included in this strategy:

- **Pedestrian Improvement Capital Fund** – The pedestrian capital fund will be used to build and implement actions identified in the corridor based planning and Activity Center planning efforts proposed in the Countywide Plan. In the next thirty years approximately $20 million is needed for this program.
- **Traffic Calming Program** – Traffic calming improvements would be developed as part of the comprehensive Activity Center planning process. These improvements will be relatively small-scale, including traffic calming improvements, transit access improvements and improvements to the area's pedestrian and bicycle networks. In the next thirty years approximately $40 million is needed for this program, with approximately $10 million in anticipated sales tax reauthorization funding. The improvements could also be funded using other categories if they met the appropriate criteria (e.g., bicycle improvements identified in the Activity Center planning process could be funded from the Bicycle Improvement Capital Fund.)

Safety Program

No additional actions in this Strategy – actions in this category are included in Strategies 1 and 3.

Goods Movement Program

Goods movement is frequently a forgotten program in transportation planning, but it has a huge impact on our daily lives and our economy. It will become even more important in the coming years as delivery services increase with the rise of Internet businesses. In Strategy 1 goods movement actions were limited to rehabilitation of the existing systems, actions that would sustain existing programs, in Strategy 2 new programs designed to address the needs of goods movement would be added.

The major action recommended in Strategy 2 for goods movement is to include consideration of goods movement in the corridor and activity center studies that will be completed during the coming years. The following specific recommendations should be addressed in these studies:

- **Delivery zones** – locations in activity centers where delivery vehicles can park to reduce the amount of double parking.
- **Truck routes** – identification of a series of truck routes through the city that reduce the amount of pass-through truck traffic in neighborhoods.

Countywide Planning and Operations Program

No additional actions are included in this Strategy – actions in this category are included in Strategies 1 and 3.

FINANCIAL SUMMARY

The financial assumptions for Strategy 2 are the same as for Strategy 1. In other words to implement the Strategy 2 actions the existing San Francisco half-cent sales tax for transportation is extended and that federal, state and local transportation funding must continue at the same rate as the past several years. Exhibit 7-2 summarizes the major funding programs and expected funds available to San Francisco during the period from Year 2001 to 2031.

Exhibit 7-2 Strategy 2: San Francisco Corridors And Activity Centers Sources of Funding for the 30-Year Period, FY 01-31		
Fund Source	**$, millions**	**% Total**
Federal	$2,256.6	41.5%
State	533.9	9.8%
Countywide Sales Tax for Transportation	2,203.4	40.6%
Other Local	438.2	8.1%
TOTAL, Sources	**$5,432.1**	**100.0%**
Shortfall – Sources to be Determined (sources less expenditures)	**-$1,174.4**	--

Notes:
Sources are not included for Regional Transit and Regional Highways in this draft.

This strategy results in a shortfall of $1.2 billion over the thirty-year period, which is an increase of $310 million over the shortfall projected for the strategy for maintaining and sustaining the existing system. The initiatives introduced in this strategy are not fully funded, with the exception of the Third Street LRT extension to Chinatown (the New Central Subway). New programs such as the Traffic Calming program, additional light rail vehicles to improve service, and extensions of trolley coach lines will require new or enhanced revenue beyond the continuation of the half-cent sales tax for transportation.

STRATEGY 2 – YEAR 2020 TRANSPORTATION CONDITIONS

Exhibits 7-3 and 7-4 summarize transportation conditions in the Year 2020 assuming that all the transportation improvements included in the San Francisco Corridor and Activity Center Actions Strategy are implemented. Both exhibits compare baseline conditions in the Year 2020 (Strategy 1) with those that can be expected under Strategy 2. Some of the key points are described below:

- Person Trips – The number of person trips using transit (linked trips) within San Francisco on a typical day will grow by 12,300, a 2 percent increase, attracting many trips from other modes of transportation (auto, walk and bicycle). Most of the trips attracted to transit will come from auto (9,900 trips per day) and the rest from other modes, such as walk or bicycle (2,300).

Exhibit 7-3
Comparison of Selected Travel Demand Model Outputs
for 2020 Conditions under Strategies 1 and 2
Daily Travel Demand

	2020 Strategy 1	2020 Strategy 2	Difference	Percentage Change
Person-Trips by Mode (1)				
Within San Francisco				
Auto	886,100	876,200	-9,900	-1%
Transit	664,100	676,400	12,300	2%
Other	567,100	564,800	-2,300	0%
Total Person-Trips	2,117,300	2,117,400	100	0%
From/to San Francisco				
Auto	1,171,100	1,169,500	-1,600	0%
Transit	283,700	285,400	1,700	1%
Other	9,300	9,300	0	0%
Total Person-Trips	1,464,100	1,464,200	100	0%
Total				
Auto	2,057,200	2,045,700	-11,500	-1%
Transit	947,800	961,800	14,000	1%
Other	576,400	574,100	-2,300	0%
Total Person-Trips	3,581,400	3,581,600	200	0%
Mode Split				
Within San Francisco				
Auto	41.8%	41.4%	-0.4%	
Transit	31.4%	31.9%	0.5%	
Other	26.8%	26.7%	-0.1%	
From/to San Francisco				
Auto	80.0%	79.9%	-0.1%	
Transit	19.4%	19.5%	0.1%	
Other	0.6%	0.6%	0.0%	
Total				
Auto	57.4%	57.1%	-0.3%	
Transit	26.5%	26.9%	0.4%	
Other	16.1%	16.0%	-0.1%	

Source: Wilbur Smith Associates, April 2000

Note:
(1) Linked person-trips with at least one origin or destination within San Francisco.

- The number of daily person trips to and from San Francisco made by transit will grow by 1,700, representing a 1 percent increase, with virtually all trips coming from previous automobile commuters.
- Modal Split – The mode split for trips to and from San Francisco in the year 2020 under Strategy 2 will be similar to the Strategy 1 mode split. The mode split for trips within San Francisco will vary slightly from Strategy 1, favoring transit trips that will increase their share by 0.5, while auto trips will decrease by 0.4 percent. Other modes of transportation will increase overall but at a slower rate than auto and transit, thus decreasing their relative modal share by 0.1 percent.
- As a result of the growth in transit usage within San Francisco, the overall transit share will increase by 0.4 percent, from 26.5 percent under Strategy 1 to 26.9 percent under Strategy 2.

Exhibit 7-4 presents a comparison of year 2020 transportation conditions in San Francisco under Strategies 1 and 2. Highlights of this data include:

- Traffic – The number of vehicle miles traveled within San Francisco County during the AM peak commute period will decrease slightly (by almost 1 percent) from Strategy 1 to Strategy 2. The number of vehicle hours of travel will also decrease by about 1 percent. The slightly higher decrease in vehicle hours as compared to vehicle miles results in a very minor increase (0.2 percent) in average travel speeds in San Francisco.
- Congestion – The number of vehicle hours spent in San Francisco on streets and freeways operating under free-flow conditions will remain the same under both strategies (1,400 hours), the same as the number of vehicle hours spent on facilities operating under congested or forced-flow conditions (9,100 hours). There will be a small decrease in the number of hours spent on streets and freeways that are approaching congestion (100 hours), reflecting a marginal improvement in traffic congestion.
- Regional Transit – The number of transit riders coming inbound to San Francisco during the AM peak commute period will remain practically the same.
- Muni Transit – The number of passengers taking Muni during the AM peak commute period will grow by almost 3 percent (7,200 trips). The highest percentage growth rate will be for the Muni Metro system, due to its expansion along the Third Street corridor from the Caltrain Depot to Market Street and north to Chinatown (Central Subway segment). Under Strategy 2 the Metro system will carry 16,400 additional passengers during the AM peak commute period.
- Some of the motor coach, trolley coach and cable car lines will decrease in ridership as a result of a shift in passengers towards Muni Metro.
- The overall number of passenger miles on Muni will grow by 10,000, a 1.6 percent increase, a higher rate than the overall number of passengers (2.7 percent), indicating that the average trip on Muni in 2020 under Strategy 2 will be longer than under Strategy 1.

Exhibit 7-4
Comparison of Selected Travel Demand Model Outputs
for 2020 Conditions under Strategies 1 and 2
AM Peak Period

	2020 Strategy 1		2020 Strategy 2		Percent Change
Highway (1)					
Vehicle Miles Traveled	492,100		487,600		-0.9%
Vehicle Hours Traveled	17,800		17,600		-1.1%
Average Travel Speed (mph)	27.6		27.7		0.2%
Vehicle Hours of Congestion (2)					
Free-flow conditions	14,000		14,000		0.0%
Approaching congestion	11,700		11,600		-0.9%
Congested conditions	8,600		8,600		0.0%
Forced-flow conditions	500		500		0.0%
Transit					
Regional Transit Trips into SF (3)	92,600		92,700		0.1%
MUNI Transit Trips					
Motor Coach	158,300	59%	154,900	56%	-2.1%
Trolley Coach	80,300	30%	74,800	27%	-6.8%
Metro LRV	24,300	9%	40,700	15%	67.5%
Cable Car	6,300	2%	6,000	2%	-4.8%
Total MUNI Transit Trips	269,200	100%	276,400	100%	2.7%
MUNI Passenger Miles	618,800		628,800		1.6%

Source: Wilbur Smith Associates, April 2000

Notes:
(1) For trips within San Francisco and between San Francisco zones and counties lines for surface streets only.
(2) Includes surface streets and freeways within San Francisco.
(3) Regional trips on BART, AC Transit, Golden Gate Transit, SamTrans and Caltrain inbound into San Francisco during the AM peak period

- Average auto travel times between San Francisco neighborhoods will remain practically the same, with the largest change (increase or decrease) being 0.5 percent .as shown in Exhibit 7-5.

Exhibit 7-5
Changes in Average Travel Times from Indicated Neighborhood to other San Francisco Neighborhoods in the Year 2020 between Strategy 1 and Strategy 2

Neighborhood	Percent Change
Presidio	0.3%
Marina/Pacific Heights	0.3%
Russian Hill/Nob Hill	0.4%
Chinatown/North Beach	0.5%
Outer Richmond	-0.1%
Inner Richmond	0.0%
Laurel Heights	0.0%
Western Addition	0.1%
Downtown/Civic Center	0.0%
South of Market	0.0%
Golden Gate Park	-0.2%
Haight/Upper Market	-0.1%
Mission	-0.1%
Potrero Hill	-0.1%
Outer Sunset	-0.1%
Inner Sunset	0.0%
Diamond Heights/Noe Valley	-0.2%
Parkside	-0.1%
West of Twin Peaks/Park Merced	-0.2%
Glen Park/Westwood	0.0%
Bernal Heights	0.0%
Bayview/Hunters Point	0.0%
Lake Merced	-0.1%
Ingleside/Ocean View	-0.1%
Outer Mission/Crocker Amazon	0.1%
Visitacion Valley	0.1%

Source: Wilbur Smith Associates, April 2000

- Average travel times between San Francisco neighborhoods and key representative regional destinations in the Year 2020 under Strategy 2 will remain virtually the same as under Strategy 1 as shown in Exhibit 7-6. The highest travel increase will be less than 1 percent, while the highest decrease will be about 3 percent, reflecting the minimal effects of Strategy 2 on highway conditions when compared to Strategy 1.

Exhibit 7-6
Increase in Average Travel Times
between San Francisco Neighborhoods and Representative Regional Destinations
in the Year 2020 between Strategy 1 and Strategy 2

Neighborhood	San Francisco Airport	Palo Alto	San Jose	Berkeley	Walnut Creek	San Rafael
Presidio	0.2%	0.1%	0.1%	-0.8%	-0.7%	-1.8%
Marina/Pacific Heights	0.2%	0.1%	0.1%	-0.8%	-0.7%	-1.8%
Russian Hill/Nob Hill	0.0%	0.0%	0.1%	-1.0%	-0.9%	-1.5%
Chinatown/North Beach	0.0%	0.1%	-0.3%	-1.0%	-0.8%	-1.5%
Outer Richmond	-0.1%	-0.1%	0.0%	-0.8%	-0.7%	-1.7%
Inner Richmond	0.0%	0.0%	0.0%	-0.8%	0.5%	-1.7%
Laurel Heights	0.0%	0.0%	0.1%	-0.9%	-0.8%	-1.7%
Western Addition	0.1%	0.1%	0.1%	-1.1%	-0.9%	-2.9%
Downtown/Civic Center	0.0%	0.0%	0.1%	-1.0%	-0.9%	-1.6%
South of Market	0.1%	0.1%	0.1%	-1.3%	-1.0%	-0.7%
Golden Gate Park	-0.1%	-0.1%	0.0%	-1.0%	-0.9%	-1.6%
Haight/Upper Market	0.1%	0.1%	0.1%	-1.0%	0.9%	-1.5%
Mission	0.1%	0.1%	0.1%	-1.1%	-0.9%	-1.5%
Potrero Hill	0.0%	0.0%	0.1%	-1.3%	-1.0%	-2.8%
Outer Sunset	-0.2%	-0.1%	0.0%	-0.7%	-0.6%	-1.4%
Inner Sunset	-0.2%	-0.1%	0.0%	-0.9%	-0.8%	-1.4%
Diamond Heights/Noe Valley	-0.1%	-0.1%	0.0%	-1.0%	-0.8%	-1.5%
Parkside	-0.3%	-0.1%	0.0%	-0.8%	-0.8%	-1.3%
West of Twin Peaks/Park Merced	-0.1%	0.0%	0.0%	-1.0%	-0.8%	-1.4%
Glen Park/Westwood	0.0%	0.0%	0.1%	-1.0%	-0.8%	-1.3%
Bernal Heights	0.1%	0.1%	0.1%	-1.1%	-0.9%	-0.7%
Bayview/Hunters Point	0.1%	0.1%	0.1%	-1.0%	-0.8%	-0.7%
Lake Merced	-0.2%	-0.1%	0.0%	-0.8%	-0.7%	-1.2%
Ingleside/Ocean View	-0.2%	-0.1%	0.0%	-0.9%	-0.8%	-1.2%
Outer Mission/Crocker Amazon	0.1%	0.1%	0.1%	-1.0%	-0.9%	-1.1%
Visitacion Valley	0.1%	0.1%	0.1%	-1.0%	-0.8%	-0.7%

Source: Wilbur Smith Associates, April 2000

Chapter 8
SYSTEM EXPANSION

This chapter presents Strategy 3 of the San Francisco Countywide Transportation Plan. Strategy 3 focuses on improving transit and roadways in San Francisco and the Bay Area. Significant new funding sources will be needed to implement this strategy. Developing this funding plan will require working with regional partners to develop a consensus on project definition and funding strategies. Some of the major initiatives included in Strategy 3 include:

- Muni light rail extensions (e.g., Geary, North Beach)
- BART expansion, station improvements and new stations
- Caltrain expansion, station improvements, electrification and downtown extension
- Transbay Terminal Project
- Bay Area Water Transit Initiative
- Southern Crossing

It is important to realize that most of these initiatives will require significant additional planning before they have been defined sufficiently even to begin developing solid financial plans. Several of the other projects are conceptual in nature at the present. These initiatives are described in more detail below.

FINANCIAL CONSTRAINTS

All the actions included in Scenario 3 are essentially unfunded. Given the amount of federal, state and local funding expected to be available during the next twenty years none of these actions could be completed without a significant new funding source. However, it is important to plan future major transportation improvements to begin setting the stage for new funding programs as well as to take advantage of opportunities and other innovative funding approaches for implementation (e.g., joint development).

It is also critical to understand that these expansion projects all compete with funding needed to keep the existing system operating (Strategy 1: Maintain and Sustain Existing System) as well as the limited expansions of service included in Strategy 2: San Francisco Corridors and Activity Centers program. Furthermore, these projects compete with other expansion projects in other counties and they compete with each other for major new funding sources. Addressing these competing needs across the Bay Area will require a strong effort to develop a coordinated expansion program with San Francisco's regional partners.

ACTION DEFINITION

The Regional Transit and Highway Expansion Strategy consists of actions in the Muni transit, regional transit and regional highway programs. These actions were developed during the

Countywide Transportation Plan's public outreach process and by working with city departments as well as regional agencies. The actions are outlined below and summarized in Exhibit 8-1.

Exhibit 8-1
Strategy 3: System Expansion
Program and Project Expenditures for the 30-Year Period, FY 01-31

Action Category	Total Cost $, millions	SF Share $, millions
Muni – Geary Corridor	1,000	1,000
Muni – North Beach/Chinatown Corridor	TBD	TBD
Muni – Other rail corridors	TBD	TBD
Muni – Subtotal		
BART – System Rehabilitation (1)	255	(2)
BART – San Francisco Station Area Projects	22.5	22.5
BART – System Capacity Expansion	?	69.5
BART – 30th Street Station	300	(2)
BART – Subtotal		
Caltrain – Rehabilitation (1)	402	34
Caltrain – Service Expansion (3)	57	11
Caltrain – San Francisco Station Improvements (3)	35	35
Caltrain – Electrification (3)	376	41.5
Caltrain – Downtown Extension (3) (4)	620	(2)
Caltrain – Subtotal	1,490	120.5
Golden Gate Transit Improvements	TBD	TBD
Transbay Terminal	TBD	TBD
Regional Ferry Plan	TBD	TBD
Southern Crossing	TBD	TBD
San Francisco – San Mateo U.S. 101 Improvements	TBD	TBD
TOTAL, Expenditures		

Notes:

(1) Rehabilitation is shown on this table for regional transit systems since it is a large cost and it is not fully funded in Strategy 1.

(2) Local funding share to be determined.

(3) Caltrain funding assumptions include some programs that may have been allocated to Muni projects in Strategies 1 and 2.

(4) Downtown Extension cost currently being re-evaluated in environmental study and MTC Transbay Terminal Study.

San Francisco Municipal Railway Transit

The San Francisco Municipal Railway is currently completing final design on the Third Street Light Rail Project and will begin preliminary engineering for the Central Subway Project during the coming year. This program consists of developing the next series of Muni light rail expansion projects. The following corridors have been identified for light rail transit:

- **Geary Corridor** – The Geary Corridor is the second phase of the SFCTA's Four Corridor Plan (1995). Conceptual planning for the project identified a subway in the financial district with surface light rail west of Van Ness. The Central Subway project is constructing the downtown portion of the subway for the Geary Corridor.
- **Chinatown/North Beach Corridor** – The Chinatown/North Beach Corridor is an extension of the Central Subway north of Clay Street to Washington Square and a surface extension to the Fisherman's Wharf area. The project was identified as the third phase of the Four Corridor Plan, but could be advanced if there are funding opportunities.
- **Van Ness Corridor** – The Van Ness Corridor was identified as the fourth priority in the Four Corridor Plan. No significant conceptual planning has been done for this corridor.
- **Geneva Corridor** – The Geneva Avenue Corridor has been identified by the City of Brisbane as a solution to transportation problems in the rapidly developing Bayshore area of Brisbane and as a rail extension to San Francisco's Candlestick development project. In Brisbane's plan Geneva Avenue would be extended to a new interchange with U.S. 101 and light rail transit would be in the median. Light rail would connect the Balboa Park Muni Metro facility with a relocated Caltrain Bayshore Station, Muni Third Street Light Rail and Candlestick. This corridor is being studied in the San Francisco – San Mateo County Transportation Study.
- **G-Line to Golden Gate Park** – This is a proposal to extend historic streetcars from Market Street through the N-Line Tunnel to 9th Avenue and then construct a new line north on 9th Avenue to the Golden Gate Park Concourse. This project is the subject of an initial planning study.
- **Fisherman's Wharf to Presidio Transit** – This is a proposal to extend historic streetcars from Fisherman's Wharf to the Presidio. This project is in the very preliminary stages of planning but is of significant interest to the National Park Service and Presidio Trust.
- **N-Line – Parnassus to Mission Bay Shuttle** – This would be light rail service that operated between the Parnassus UCSF Campus to the new Mission Bay UCSF Campus via the N-Line Tunnel, Church Street to 16th Street and east on new track constructed in 16th Street to Mission Bay and the Third Street Light Rail line. This project would provide significant new transit connections to the Mission Bay area and could be the subject of future Muni planning.
- **Cable Car Extension Projects** – These projects consist of extending the California Street cable car to Fillmore Street and the Mason Street line to Jefferson Avenue. These projects are in the very conceptual planning stage.

As this list indicates there are many worthwhile Muni rail transit improvement projects in San Francisco. The Countywide Transportation Plan recommends that Muni prepare a plan for

implementing short range projects which have significant planning completed (Geary Corridor) and a strategic plan to analyze opportunities for implementing the longer range projects including their prioritization (please see Chapter 5).

Regional Transit

One of San Francisco's most important transportation problems is how to improve regional transit for people coming into San Francisco as well as for San Franciscans travelling out of the city. It is especially important to have a good regional transit system because if people coming to San Francisco and San Franciscans travelling out of the city had a good alternative to driving a significant share of them would use transit and reduce congestion on our streets and roads.

The key problem with regional transit projects is that they are generally very expensive and complicated. Adding to the problem is the fact that the governing structure for regional transit agencies is not very transparent to citizens and elected officials – this makes it hard to develop the political energy to accomplish regional transit projects.

In terms of financing, since many regional projects are quite expensive and compete with local projects it has been very difficult to obtain funding. One important part of this problem is that the proposed projects are not often well defined and almost never compared between systems to determine which project would be most effective. The process also does not easily allow two projects to be designed to work together – perhaps half of two individual projects – to get a better overall regional transit system.

The crisis in regional transportation should serve as a call to action for local government leaders to develop a regional transportation decision-making structure that works, by which we mean solves transportation problems in a mode-blind customer-oriented manner. The San Francisco Countywide Transportation Plan supports this ultimate goal, and suggests that developing consensus on the extent and funding for the major regional transit projects listed below could be a model for developing this type of decision-making structure.

The following projects are important to meeting San Francisco's future transportation needs. The city must work with regional partners to develop consensus on the scope and funding arrangements for these projects. In the list of projects presented below rehabilitation is included although it is also discussed in the Maintain and Sustain Strategy. The reason is that there are large unfunded rehabilitation needs and these needs must be funded before major new expansion projects are considered. The projects are:

- **BART System Rehabilitation** – BART has identified approximately $255 million worth of rehabilitation projects. These include new fare collection equipment, elevators and escalators, station rehabilitation, seismic retrofit, and major facility rehabilitation. Many of these projects are currently unfunded. BART is currently preparing a more detailed assessment of these rehabilitation needs.
- **BART San Francisco Station Area Projects** – BART is currently developing programs to improve stations in San Francisco including projects that make the stations more amenable to neighborhood needs and to improve land-use and transportation coordination. BART is identified approximately $22.5 million worth of improvements to

the 16th/Mission, 24th/Mission, Balboa Park and Glen Park stations. BART is also working with neighborhood groups and City Departments to refine the plans.

- **BART System Capacity Expansion Projects** – BART is currently developing a program to increase its capacity. Two pieces of this program are increases to the amount of fare collection equipment in San Francisco stations (approximately $32 million) and improvements to BART's automatic train control system (San Francisco's share approximately $37.5 million).
- **BART 30th Street Station** – BART has identified a series of operational improvements and a new station at 30th Street in its long range planning. The conceptual cost of this new station would be approximately $300 million.
- **Caltrain Rapid Rail Rehabilitation** – Caltrain has identified a need for $402 million for rehabilitation of its system. San Francisco's share of this program is approximately $34 million. This program will rebuild Caltrain tracks and replace the old signal system. The eight-year program is currently underway, but will require funding from San Francisco in the coming years.
- **Caltrain Rapid Rail Capacity Enhancements** – This project consists of adding capacity to the Caltrain system by building third tracks in selected locations and adding additional switches to the network. These changes will enable Caltrain to operate more trains and more express trains. The cost of these improvements is approximately $57 million and they are being implemented with the Caltrain rehabilitation program. San Francisco's share of this program is approximately $11 million.
- **Caltrain San Francisco Station Improvements** – This project consists of making improvements to San Francisco Caltrain stations. Caltrain has identified a cost of approximately $36 million for these projects. The projects are designed to make the stations more accessible and improve coordination with other transit systems.
- **Caltrain Electrification** – Caltrain has estimated that electrification will cost $376 million. This project will improve Caltrain acceleration, improve air quality and reduce noise. San Francisco's share of this project would be approximately $42 million of the $376 million total price. Caltrain is currently preparing a more detailed cost estimate for electrification as part of the project's environmental analysis.
- **Caltrain Downtown Extension** – Caltrain has estimated the cost of a downtown extension at approximately $620 million. This cost estimate is several years old and includes assumptions no longer relevant (e.g., dual mode locomotives and an earlier version of the Transbay Terminal project). Therefore the cost estimate is being re-evaluated as part of the project's environmental studies.
- **Golden Gate Transit Ferry Program** – Golden Gate Transit has a program for rehabilitation and expansion of the ferry system. This project includes improved docking facilities in San Francisco.
- **Bay Area Water Transportation Initiative** – The Bay Area Council organized a group of leaders to plan a regional water transportation system. A new agency has been formed to complete more detailed planning for the system. New capital costs for this system

should be considered in the context of the overall regional transportation planning process and capital funding needs.

- **Transbay Terminal** – The Metropolitan Transportation Commission (MTC) is coordinating a multi-agency task force that is developing a preferred alternative for rebuilding the Transbay Terminal. The new terminal would include improved facilities for regional buses and Muni transit as well as an underground rail terminal for Caltrain and/or high speed rail. Financing for the new terminal will rely significantly on joint development opportunities from land occupied by the existing terminal and access structures.
- **California High Speed Rail** – The California High Speed Rail Authority is planning to prepare preliminary engineering and environmental analysis of a statewide high speed rail network. This network is currently planned to serve San Francisco International Airport and downtown San Francisco using the Caltrain alignment.

As this list indicates, there are many very worthwhile regional transit projects that would significantly improve San Francisco's transportation system. Unfortunately almost all the projects are currently unfunded. Therefore, San Francisco must work closely with regional partners to refine the projects and to develop a comprehensive approach to funding them. By creatively combining different projects and working to reduce institutional barriers an innovative approach can be found to significantly improve regional transit service to and from San Francisco.

Regional Highway Program

San Francisco's highway system is generally built-out. Most of the future work on the City's freeways will be limited to maintenance and small-scale operational improvements. However, there will be a significant amount of rehabilitation (please see Chapter 6: Maintain and Sustain Existing System). However there are two major regional projects that will impact San Francisco:

- **Southern Crossing** – The Metropolitan Transportation Commission is currently completing a conceptual study of a new Southern Crossing of the Bay. This new structure would connect State Route 238 in Hayward to Interstate 380 just north of San Francisco Airport. The studies also include a new transit line on the bridge. Initial cost estimates for the bridge are in the $4 billion range. This facility would have significant impact on San Francisco transportation conditions by reducing the traffic through San Francisco and the Bay Bridge traveling between the East Bay and San Mateo County.
- **San Francisco – San Mateo County Transportation Study** – This study will identify a series of transit and roadway improvements in the Southeast portion of San Francisco and Northeast portion of San Mateo county. Transit improvements include the Geneva LRT extension and Caltrain improvements. Roadway improvements include reconstruction of the interchange for U.S. 101 to serve the Candlestick – Brisbane area. One goal of the study is to identify funding programs for these improvements.

The Transportation Authority will follow developments in this planning and include more discussion of the project in the Transportation Plan updates.

YEAR 2020 TRANSPORTATION CONDITIONS

The transportation impacts of these projects on 2020 conditions are outlined in the following chapter.

Chapter 9
MARKET BASED AND INNOVATIVE ACTIONS

This chapter presents Strategy 4 of the San Francisco Countywide Transportation Plan. Strategy 4 focuses on market based and innovative actions. These actions are designed to improve transportation conditions by raising funds for transportation improvements and more importantly using pricing to influence the demand for transportation services (much like what is done by telephone companies).

The Market-Based and Innovative Actions Strategy includes the following four major initiatives:

- **Supercorridors** – Underground roadways paid for by tolls that take through traffic off surface streets providing space for transit, bikes, pedestrians and traffic calming.
- **Traffic Calming and Parking Redesign** – Increasing parking fees to pay for redesign of neighborhood streets to increase parking efficiency, reduce through traffic, improve pedestrian safety, and add pedestrian amenities.
- **Goods Movement Improvements** – Implement a delivery license program to pay for a network of delivery zones in neighborhoods to reduce impact of delivery trucks on traffic.
- **Greenlines and Nightlines** – New series of semi-express transit routes designed to take passengers from regional transit gateways to major San Francisco destinations including the Presidio and Golden Gate Park Concourse.
- **Carsharing and Travel Replacement** – Carsharing is a program that enables persons to have easy access to a shared pool of cars. Travel replacement is using high technology to replace the need for travel or to reduce the length of trips.

These programs are controversial, but one conclusion of the Transportation Plan is that San Francisco must consider new ideas for solving transportation problems, the status quo cannot meet current or projected demand. It is important to emphasize that these projects would not take funding from other needs and that the Transportation Plan suggests simply studying them – not implementing them.

FINANCIAL CONSTRAINTS

The actions in this strategy are designed to either raise their own funding or raise funding for other projects. They would not draw on federal, state and local funding expected to be available during the next twenty years for the projects identified in the three previous strategies, but might make new funding from those sources available.

ACTION DEFINITION

This section outlines actions recommended for study and potential implementation as part of the Countywide Transportation Plan.

Vehicle and Travel Replacement Programs

The vehicle and travel replacement program is a special category of project for the Market Based and Innovative Actions strategy. There are two actions included in the program, they are:

- **Carsharing** – Car-sharing is a neighborhood-based, short-term auto rental service that makes cars available to people on a per-use basis. The principle of car sharing is simple: members gain the benefits of a private car without the costs and responsibilities of ownership. In urban areas like San Francisco, where people have good transit, bicycle or pedestrian access to most destinations, car-sharing can reduce automobile travel. This action consists of supporting car-sharing by working to facilitate car-sharing organizations and encouraging city departments to consider ways of integrating car-sharing into on-going planning efforts. For example, as part of the Activity Center process the Planning Department could develop locations in the neighborhood under study for a car-sharing location, or parking standards could be reduced in areas where car-sharing was shown to be working.
- **Travel Replacement** – Travel replacement programs are ways of providing access to jobs, information, goods and services without forcing people to travel. A simple example is an ATM that enables one to obtain cash without going into a bank. The idea is to put functions on a network and to place equipment in centers that enable one to utilize the information on the network to accomplish some task without traveling out of the neighborhood. In this case the equipment in question would not be simple internet surfing equipment, but perhaps specialized medical equipment that was connected to a health center in a hospital. People could use this technology in their neighborhood without traveling to the hospital. There are many other examples of services that could be provided remotely once a critical mass of users could be assembled. This action consists of studying this concept and working with other city agencies to develop a pilot program for further evaluation. Outside grants would be sought for the project.

San Francisco Municipal Railway Transit

Improving public transit in San Francisco is a prime objective of the Transportation Plan. Solving the City's transportation problems will require that more residents and visitors are attracted to transit for more than just the journey to work. This means that transit reliability and service must improve but also the Muni must think about new types of service and marketing designed to attract people who do not normally use transit.

Of course the most important attraction to transit is good service. Strategies 1, 2 and 3 are designed to increase Muni reliability and improve service. Muni project in Strategy 4 therefore are intended to help Muni tailor its service to new markets and to increase funding for these services without impacting Muni's basic service budget. The Transportation Authority will work closely with Muni in developing the program. The following actions are proposed for consideration in the coming years:

- **Greenlines** – The Greenlines Program was suggested by the National Park Service as a way to get people to use transit instead of cars when they visit the Presidio and Golden Gate Bridge. However the program should also consider other visitor oriented locations in the City such as Fisherman's Wharf, PacBell Park and Golden Gate Park. The service

would consist of semi-express transit routes designed to take passengers from regional transit gateways to major San Francisco destinations. The service should use a unique type of vehicle and it should have a convenient fare structure that attempts to cover a significant share of costs. Similar programs or 'Culture Routes' are in place in many American cities.

- **Nightlines** – Similar to Greenlines, a transit program that links regional transit gateways with San Francisco's nighttime popular destinations, including North Beach/Chinatown, SOMA and the Mission. This service should use a unique type of vehicle and could include additional safety personnel. Muni should work with regional transit providers to ensure that connections are made and consider extending transit service hours on weekends.
- **Supercorridors** – Improving Muni service on surface roadways replaced by Supercorridors is a critical part of the overall Supercorridors program. The idea is to build exclusive transit lanes on the surface for light rail and/or rapid buses with coordinated traffic signals and improved transit stops. This will significantly increase transit speeds and reliability in the corridors.

Regional Transit

Regional transit operators would be part of the Greenlines and Nightlines transit effort. One advantage is that by improving coordination for these specific and limited programs overall transit coordination between regional and local transit could be improved. Regional transit operators could also use the transit ways constructed as part of the Supercorridors program.

Local Streets Program

A major new initiative is proposed for the streets program – construction of 'Supercorridors.' Super corridors would be underground streets designed to link parts of the city and regional gateways. Following completion of the underground roadway, the local street would be reconstructed to provide bicycle lanes and exclusive transit lanes. The roadway would be traffic calmed and would be intended to serve local traffic only. Sidewalks would be widened and pedestrian amenities such as trees and benches would be added to the corridor.

At the outset it is important to emphasize that this plan simply recommends studying these facilities. There are many critical design and engineering issues that would need to be addressed before such a project could be even considered for implementation including portal design, ventilation, through traffic capacity, and environmental impacts in the neighborhoods.

These streets would be funded by user fees collected using an automated system like that in use on many toll bridges and facilities throughout the country. Under such a system cars have an account that is debited automatically (so the car does not need to stop) when the car enters the facility. The actual charge for using the facility can be adjusted based on demand to reduce congestion. These facilities would not compete with other San Francisco transportation needs, as their funding would come from the toll. It is anticipated that they would be built and operated by private companies under franchise to the city.

These streets would serve two very important transportation functions. They would provide a relatively fast and direct route between two points – this would help everyone but would provide

real benefits for regional travel and goods movement. More importantly they would enable San Francisco to reclaim our streets and use them to speed-up Muni service and improve neighborhood livability by taking traffic off the surface streets. As Muni service improved more trips could be attracted to Muni further reducing surface traffic. There would also be more room for bike lanes and sidewalks. Finally, making these improvements to the surface streets and placing through traffic underground would improve pedestrian safety.

This initiative is extremely innovative and will require a significant amount of public input and discussion before would be implemented. This plan calls for studying the idea and determining its feasibility. It has been implemented in several other cities including Paris, Singapore, and in Norway.

Three specific corridors were identified for consideration in a feasibility study in order to give an idea of the types of benefits these facilities could provide. It is important to emphasize that these descriptions are only intended to give an idea of the concept, any specific details like exit/entrance locations would be developed in the planning process with full community participation. Three examples of supercorridors include:

- **Fell / Oak Couplet Corridor** – The idea here would be to construct a tunnel from approximately Laguna to Divisadero. This tunnel would utilize the area's topography in much the same manner as the existing Broadway Tunnel. Traffic calming would be done on Fell/Oak streets above the tunnel, including developing more efficient parking programs that could increase the amount of street parking available for neighborhood residents.
- **Van Ness Avenue Corridor** – A tunnel would serve traffic between approximately Fell Street and Lombard with exits/entrances at Broadway and Geary. The idea would be to take regional traffic off Van Ness Avenue, Franklin and Gough Streets. The goal would be to reclaim street space on Van Ness Avenue for transit preferential lanes and improved pedestrian amenities. On Franklin and Gough Streets, the goal would be to improve neighborhood livability.
- **19th Avenue** – A tunnel would be built from Junipero Serra to Lake Street with exits/entrances at Geary Boulevard, Lincoln Way, Quintara Street, Ocean Avenue and Brotherhood Way. The goal would be to reclaim street space on 19th Avenue for improved transit, pedestrian amenities and neighborhood livability.

The Transportation Plan recommends that a very basic feasibility study be completed of the Supercorridor concept and that it be re-evaluated in updates of the Countywide Transportation Plan.

Bicycle Program

The Scenario 4 Bicycle Program includes one action in addition to Strategies 1 and 2. This action would seek to provide additional funding for implementing improvements to be developed in the corridor and activity center based planning processes. The action is:

- **Voluntary Bicycle Registration Program** – This action consists of implementing a voluntary registration of bicycles in the city. In exchange for a fee bicycles would be

registered into a database that could be used to reunite owners with bicycles in the event that the bikes were found. Funds generated from this program would be used to support bicycle capital improvements. This program would be voluntary, but with the support of bicycle advocacy groups could generate a significant amount of money for use building more bicycle routes.

Pedestrian Program

The Scenario 4 Pedestrian Program is similar to the Bicycle Program – it essentially consists of doing more activity center based improvements like traffic calming and sidewalk improvements with funds generated by new user fees. The specifics of any program would be developed as part of the activity center planning process and would be subject to a full public participation process. The following potential programs could be implemented as part of these planning processes:

- **Parking Registration Program** – This action consists of developing more efficient neighborhood parking programs in exchange for increased neighborhood parking program fees. Funds generated from this program would be used to reconfigure parking and re-plan streets to provide more parking while also improving the neighborhood livability by improving sidewalks and adding trees. Programs like the Wooneroff (or 'living street') concept from Europe could be planned as part of this process.
- **Parking Meter Program** – This action consists of developing a better method for charging for street parking. The action would include considering high-tech parking meters using debit cards and improving turnover for neighborhood parking areas.
- **Business Improvement Districts** – The existing business improvement districts could add implementation of pedestrian improvements to their program to help fund sidewalk and street tree programs.

Safety Program

The Scenario 4 Safety Program seeks to implement additional safety improvements with new sources of funds. The specifics of any program would be developed as part of the Corridor planning process and would be part of the Department of Parking and Traffic's efforts to reduce accidents in the city. The following potential action could be implemented as part of this program:

- **High Accident Cost Program** – This action consists of working with insurance companies to identify locations where they are experiencing high numbers of claims and developing capital improvements that can reduce accidents at the location thus reducing the cost of claims to the insurance company. The insurance company would contribute funds to the capital improvements. A similar program is currently working in Michigan and a major insurance company has been contacted to ascertain their interest in a San Francisco program.

Goods Movement Program

The Scenario 4 Goods Movement Program is similar to the Bicycle and Pedestrian Programs – it essentially consists of doing more corridor and activity center based improvements designed to help improves the goods movement process in San Francisco with funds generated by new user fees. The specifics of any program would be developed as part of the corridor and activity center

planning processes including full public participation. The following potential programs could be implemented as part of these planning processes:

Goods movement is frequently a forgotten program in transportation planning, but it has a huge impact on our daily lives and our economy. It will become even more important in the coming years as delivery services increase with the rise of Internet businesses. In Strategy 1 goods movement actions were limited to rehabilitation of the existing systems, actions that would sustain existing programs, in Strategy 4 new programs designed to address the needs of goods movement would be added.

The major action recommended in Strategy 4 for goods movement is to include consideration of goods movement in the corridor and activity center studies that will be completed during the coming years. The following specific recommendations should be addressed in these studies:

- **Enhanced Delivery Zone Program** – This action consists of increasing the number of delivery zones in activity centers and on major corridors. As part of the program to ensure maximum efficiency for the use of these zones vehicles using the zones would be required to pay an annual registration fee. This registration fee would be used to enforce the zones (only delivery vehicles that pay the fee could use the zone) as well as to pay for capital improvements necessary to implement the zones.
- **Delivery Centers** – This action consists of fostering the creation of delivery centers in San Francisco neighborhoods. These delivery centers could serve as a place where express delivery services and goods delivery drop-off packages for residents of a neighborhood, enabling residents to pick-up the goods at their convenience. This would reduce the number of trips delivery companies needed to make to neighborhoods as well as being more convenient to users. This action could be implemented by encouraging these types of businesses to locate in neighborhood commercial areas in the activity center planning process.

STRATEGIES 3 AND 4 – YEAR 2020 TRANSPORTATION CONDITIONS

The travel demand forecasting model was run for Year 2020 transportation conditions with implementation of many transportation improvements identified in Strategies 3 and 4. The specific actions included in the transportation model were:

- Geary Light Rail Transit
- Geneva Light Rail Transit
- Three Supercorridors
- Caltrain Downtown Extension
- BART Service Expansion

Exhibits 9-1 and 9-2 summarize transportation conditions in the Year 2020 assuming that all the transportation improvements included in the Implement Innovative San Francisco Actions and Regional Transit are implemented. Both exhibits compare future conditions in the Year 2020

under Strategy 2 with those that can be expected under Strategies 3 and 4. Some of the key points are described below:

[Note: The model results are currently being summarized. They will be provided once the analysis is complete.]

Exhibit 9-1
Comparison of Selected Travel Demand Model Outputs
for 2020 Conditions under Strategies 2 and 3 & 4
Daily Travel Demand

	2020 Strategy 2	2020 Strategies 3 & 4	Difference	Percentage Change
Person-Trips by Mode (1)				
Within San Francisco				
Auto	876,200			
Transit	676,400			
Other	564,800			
Total Person-Trips	2,117,400			
From/to San Francisco				
Auto	1,169,500			
Transit	285,400			
Other	9,300			
Total Person-Trips	1,464,200			
Total				
Auto	2,045,700			
Transit	961,800			
Other	574,100			
Total Person-Trips	3,581,600			
Mode Split				
Within San Francisco				
Auto	41.4%			
Transit	31.9%			
Other	26.7%			
From/to San Francisco				
Auto	79.9%			
Transit	19.5%			
Other	0.6%			
Total				
Auto	57.1%			
Transit	26.9%			
Other	16.0%			

Source: Wilbur Smith Associates, April 2000

Note:
(1) Linked person-trips with at least one origin or destination within San Francisco.

Exhibit 9-2
Comparison of Selected Travel Demand Model Outputs
for 2020 Conditions under Strategies 2 and 3 & 4
AM Peak Period

	2020 Strategy 2		2020 Strategy 3 & 4	Percent Change
Highway (1)				
Vehicle Miles Traveled	487,600			
Vehicle Hours Traveled	17,600			
Average Travel Speed (mph)	27.7			
Vehicle Hours of Congestion (2)				
Free-flow conditions	14,000			
Approaching congestion	11,600			
Congested conditions	8,600			
Forced-flow conditions	500			
Transit				
Regional Transit Trips into SF (3)	92,700			
MUNI Transit Trips				
Motor Coach	154,900	56%		
Trolley Coach	74,800	27%		
Metro LRV	40,700	15%		
Cable Car	6,000	2%		
Total MUNI Transit Trips	276,400	100%		
MUNI Passenger Miles	628,800			

Source: Wilbur Smith Associates, April 2000

Notes:
(1) For trips within San Francisco and between San Francisco zones and counties lines for surface streets only.
(2) Includes surface streets and freeways within San Francisco.
(3) Regional trips on BART, AC Transit, Golden Gate Transit, SamTrans and Caltrain inbound into San Francisco during the AM peak period

Exhibit 9-3
Changes in Average Travel Times from Indicated Neighborhood to other San Francisco Neighborhoods in the Year 2020 between Strategy 2 and Strategy 3 & 4

Neighborhood	Percent Change
Presidio	
Marina/Pacific Heights	
Russian Hill/Nob Hill	
Chinatown/North Beach	
Outer Richmond	
Inner Richmond	
Laurel Heights	
Western Addition	
Downtown/Civic Center	
South of Market	
Golden Gate Park	
Haight/Upper Market	
Mission	
Potrero Hill	
Outer Sunset	
Inner Sunset	
Diamond Heights/Noe Valley	
Parkside	
West of Twin Peaks/Park Merced	
Glen Park/Westwood	
Bernal Heights	
Bayview/Hunters Point	
Lake Merced	
Ingleside/Ocean View	
Outer Mission/Crocker Amazon	
Visitacion Valley	

Source: Wilbur Smith Associates, April 2000

Exhibit 9-4
Increase in Average Travel Times
between San Francisco Neighborhoods and Representative Regional Destinations
in the Year 2020 between Strategy 2 and Strategy 3 & 4

Neighborhood	San Francisco Airport	Palo Alto	San Jose	Berkeley	Walnut Creek	San Rafael
Presidio						
Marina/Pacific Heights						
Russian Hill/Nob Hill						
Chinatown/North Beach						
Outer Richmond						
Inner Richmond						
Laurel Heights						
Western Addition						
Downtown/Civic Center						
South of Market						
Golden Gate Park						
Haight/Upper Market						
Mission						
Potrero Hill						
Outer Sunset						
Inner Sunset						
Diamond Heights/Noe Valley						
Parkside						
West of Twin Peaks/Park Merced						
Glen Park/Westwood						
Bernal Heights						
Bayview/Hunters Point						
Lake Merced						
Ingleside/Ocean View						
Outer Mission/Crocker Amazon						
Visitacion Valley						

Source: Wilbur Smith Associates, April 2000

Chapter 10
FINANCIAL ELEMENT

The San Francisco County Transportation Authority was created to oversee the expenditures of the half-cent countywide sales tax for transportation (Proposition B) in 1989. Soon thereafter, the Authority was designated as the Congestion Management Agency (CMA) for San Francisco under a new state law. As the CMA, the Authority is responsible for developing the 7-year Capital Improvement Program (CIP) and for recommending the programming of most state and federal funds to projects in the City. Combined with its responsibility for allocating the half-cent sales tax for transportation, the Authority influences or controls nearly all transportation funding in San Francisco.

Effective implementation of the four strategies recommended in the Countywide Transportation Plan requires a comprehensive financial plan, based on realistic financial assumptions. The focus of the financial element is on capital investments, leaving the majority of the operating costs and revenue detail within other plans, such as transit operators' Short Range Transit Plans, and for further development in the planning process. Further, the structure of the financial element of the Plan focuses on the half-cent sales tax for transportation, and the state and federal funds leveraged by the sales tax.

This chapter is organized into five sections: first, the approach to the financial plan is described, second the program and project costs are identified by strategy, and third the revenue estimates for each of the strategies are provided. The fourth section outlines the shortfalls anticipated and the last section discusses the financial strategies to be pursued for implementing the Plan.

FINANCIAL PLAN APPROACH

As the San Francisco half-cent sales tax for transportation plays a significant role in funding programs and projects for the City, the financial plan is structured to reflect the prominence of the sales tax as an essential element of the plan. Proposition B, the half-cent sales tax measure passed by the voters of San Francisco in 1989, will terminate ("sunset") in FY 2009-10. Re-authorization to continue the half-cent sales tax will require voter approval. In this Plan, the sales tax is assumed to be approved for another twenty years, extending the tax to FY 2030-31. While the Plan is a twenty year plan in that the planning horizon used to estimate population and employment data and to estimate transportation system demand and capacity is the year 2020, the financial element is extended to 2031.

The financial plan was developed using cost estimates provided by the sponsoring agencies and City departments. Federal, state, and local revenues were estimated based on the historical trends for those sources. Accurately predicting the future 20 or 30 years from now is impossible. However, historical data and our understanding of the near term gives us a basis for projecting costs and revenues in the future. Given the time frame for the sales tax reauthorization, and some of the large projects and ongoing programs needed to sustain the existing system, a 30 year look into the financial future is a valuable component of the planning process.

The costs and revenues in the Plan are expressed in 2001 dollars, reflecting the potential adoption of a sales tax continuation expenditure plan and voter approval of the tax in that fiscal year.

PROGRAM AND PROJECT COSTS

Program and project cost information was obtained from the sponsoring agencies and City departments and from the Authority's Strategic Plan. The San Francisco City Departments (Muni, Department of Public Works, Department of Parking and Traffic, City Planning Department) have projected the costs and funding from sources other than the half-cent sales tax for the next ten years in various planning documents they produce. Those documents were used to identify costs for the first ten years of the financial element of the Plan and formed the basis for projecting costs for the following twenty years of the plan.

Other agencies such as BART, Caltrain, Golden Gate Transit, Caltrans, and MTC were requested to provide 30-year cost information for specific programs and projects included in the San Francisco Plan. For example, transit operators (other than Muni) serving San Francisco were asked to provide cost and revenue data for programs and projects that were located in San Francisco or the San Francisco share of programs and services benefiting San Francisco.

All programs and projects were sorted by Strategy into the ten Plan categories and in some cases into subcategories. The program and project expenditure estimates are summarized in Exhibit 10-1.

Exhibit 10-1
Strategy 1 and Strategy 2
Program and Project Expenditures for the 30-Year Period, FY 01-31

Action Category	Strategy 1 $, millions	Strategy 2 $, millions
San Francisco Transit	$3,806.0	$4,476.2
Regional Transit	TBD	TBD
San Francisco Paratransit Program	387.9	387.9
San Francisco Streets and Roads Program	1,327.5	1,551.0
Regional Highways	TBD	TBD
Bicycle Program	2.3	52.3
Pedestrian Program	44.1	104.4
Safety Program	--	--
Goods Movement Program	--	--
Countywide Transportation Management and Planning	34.7	34.7
TOTAL, Expenditures	**$5,602.5**	**$6,606.5**

Notes:
The Safety Program is incorporated into the other programs.
Goods Movement is addressed in the Regional Transit and Regional Highways categories.

REVENUE ESTIMATES

Revenue estimates for the 30-year period were obtained primarily from the sponsoring agencies and departments using the same methodology employed for collecting cost data. Essentially, all funds except the half-cent sales tax funds, were assumed to be available at the current levels. For example, federal formula funds to transit currently provide 75 to 80 percent of fleet replacement and rehabilitation funding needs for Muni. These funds are assumed to be available at the same levels for the remainder of the Countywide Plan. Further analysis on the availability of federal and state funds is under study, the results of which will be incorporated into future iterations of the Plan.

For Strategy 2, federal discretionary funds are assumed to be available for the subway extension to Chinatown (the second phase of the Third Street Light Rail project), and for the Integrated Transportation Management System only. This is a conservative assumption, as it is likely that additional discretionary funds will be available in the future.

For the San Francisco half-cent sales tax projection, the Authority's forecast for the remaining ten years of the current program was used and the growth assumptions for the FY 2000-2010 period were repeated to forecast the following twenty years. These forecasts are expressed in 2001 dollars and assume a one percent annual real growth rate. This rate is slightly lower than the 1.28 percent average annual real growth experience for the past 8 years of the current sales tax program.

No new revenues beyond the continuation of the half-cent sales tax are assumed to become available in the Plan. New revenues are discussed as a part of the financial strategies to be considered in implementing the recommendations of the Plan.

Revenues available for each of the Plan strategies are shown in Exhibit 10-2.

Exhibit 10-2
Strategy 1 and Strategy 2
Sources of Funding for the 30-Year Period, FY 01-31

Fund Source	Strategy 1 $, millions	Strategy 2 $, millions
Federal	$1,942.4	$2,256.6
State	370.1	533.9
Countywide Sales Tax for Transportation	2,010.2	2,203.4
Other Local	416.2	438.2
TOTAL, Sources	**$4,738.9**	**$5,432.1**
Shortfall – Sources to be Determined (sources less expenditures)	-$863.6	-$1,174.4

Notes:
Sources are not included for Regional Transit and Regional Highways in this draft.

PROJECTED SHORTFALLS

As can be seen in the expenditure summary, protecting and maintaining the substantial investment in transportation infrastructure in San Francisco requires significant resources. Comparing the projected costs with the revenues for each of the Transportation Plan strategies shows shortfalls – or need for unidentified funding sources -- for most expenditure categories over the 30-year period. Exhibit 10-3 summarizes the shortfalls.

In Strategy 1: Maintain and Sustain the Existing System, the projected shortfall is $863.6 million for the 30-year period. Key programs and projects for which full funding has not been identified are as follows:

- Muni facility rehabilitation and replacement
- Resurfacing of local streets and roads, including the backlog of street resurfacing needs
- Upgrading traffic signals in replacing traffic control devices
- Parking and traffic enforcement, including replacement vehicles
- Pedestrian programs such as sidewalks and curb ramps
- Region transit system rehabilitation (San Francisco share)

In Strategy 2: San Francisco Corridor and Activity Centers, the projected shortfall is $1.2 billion. In addition to the unfunded or partially funded programs and projects for Strategy 1, the following projects and programs contribute to this shortfall:

- Muni's new Light Rail Vehicles and historic streetcars (expansion fleet)
- Expansion of Metro East LRV operations and maintenance facility
- Construction and reconstruction of new streets
- New traffic signals, signal coordination, and future phases of the Integrated Transportation Management System
- Bike improvement capital projects
- Traffic calming program (included in the Pedestrian Program)

The nature, size, and timing of these shortfalls help define the potential financial strategies that can be pursued to implement the recommendations of the Plan.

Exhibit 10-3 Strategy 1 and Strategy 2 Projected Shortfalls for the 30-Year Period, FY 01-31		
Action Category	**Strategy 1 $, millions**	**Strategy 2 $, millions**
San Francisco Transit	$229.0	$387.4
Regional Transit	TBD	TBD
San Francisco Paratransit Program	-0-	-0-
San Francisco Streets and Roads Program	615.4	820.0
Regional Highways	TBD	TBD
Bicycle Program	0.7	25.2
Pedestrian Program	18.7	66.6
Safety Program	--	--
Goods Movement Program	--	--
Countywide Transportation Management and Planning	-0-	-0-
TOTAL, Shortfall	**$863.9**	**$1,174.4**

Notes:
The Safety Program is incorporated into the other programs.
Goods Movement is addressed in the Regional Transit and Regional Highways categories.

FINANCIAL STRATEGY

Several findings and issues emerge from a review of the funding plan cost elements, revenue availability and projected shortfalls:

Reliance on the half-cent sales tax for transportation – The San Francisco transportation system relies on the half-cent sales tax for more than 42 percent of the funding needed to maintain and sustain the existing system over the next 30 years. Voter approval of the continuation of the sales tax will ensure that critical replacement and rehabilitation projects are funded and that ongoing paratransit, bikeway and pedestrian projects are extended beyond 2010.

Current resources are inadequate to maintain and sustain the existing system – Over the next 30 years, $5.6 billion is needed to maintain the existing system and projected sources will not pay for the entire cost. The projected $864 million shortfall will require future planning efforts to focus on both cost and revenue solutions.

New sources of funding are needed to sustain and improve the system – The magnitude of projected shortfalls will require new sources of funding or significantly increased levels of funding from the current sources simply to maintain the current city sponsored programs and projects. Regional transit serving the city such as BART, Caltrain, and Golden Gate Transit will require further resources to maintain and sustain. The establishment of new sources of funding typically requires a long lead time for implementation and significant political leadership to initiate.

Cost reductions and project deferrals must be considered – While the elimination or deferral of projects in Strategy 1 is undesirable because of the negative impact on the transportation system's capacity, cost and scope reductions, project phasing, and deferrals must occur if new revenue sources are not found. This process will require programs and projects to be prioritized and funding programs optimized through the planning and programming process.

Maintenance of the existing system should be balanced with future planning – Investment decisions and priority setting must balance system maintenance needs with the need to plan for system expansion. Protecting the investment in the current system must take high priority, but not to the exclusion of planning for future transportation needs. Funding opportunities may arise that facilitate the development of expansion projects, and the city must be ready to take advantage of those opportunities by having plans for new projects and programs.

These issues, coupled with the vision and goals of the Plan, suggest that certain actions and policies be incorporated into future planning efforts. A partial list of policies and actions to be considered follows.

- Maintain current funding levels
- Advocate for new or enhanced sources of funds, before eliminating or deferring projects
- Increase San Francisco's share of regional sources
- Pursue the continuation of the half-cent sales tax for transportation in San Francisco
- Seek the most cost effective means of delivering programs and projects
- Defer programs and projects only if necessary
- Reduce costs by reducing scope or eliminating projects if necessary
- Continue to plan for new programs and projects while striving to maintain the existing system

The results of the review of the financial element of the transportation plan have shown the magnitude of projected shortfalls and the types of projects that are likely to go unfunded. This information sets the stage for further detailed financial planning, including the potential half-cent sales tax extension, and provides a framework for priority setting and investment decision-making. The financial element of the Countywide Transportation Plan will be updated with the regular updates of the Plan, incorporating actions to address the projected shortfalls.

APPENDIX

Appendix
SAN FRANCISCO HALF CENT SALES TAX EXTENSION

This Expenditure Plan identifies projects and programs to be funded with an extension of the countywide half-cent sales tax for transportation (Proposition B). The current twenty-year sales tax will expire in FY 2009-10. The sales tax extension will be a twenty-year program beginning in FY 2010-11 and ending in FY 2030-31.

The draft Expenditure Plan is rooted in the success of the Prop. B program approved by the voters in 1989 and as such its structure is similar to that program. The four categories and allocation shares to those categories included in the Prop. B Expenditure Plan are replicated in the draft Expenditure Plan and are as follows:

- Transit 60%
- Streets and Roads (including Traffic Safety) 30%
- Paratransit 8%
- Countywide Transportation Management and Planning 2%

A sales tax projection for the twenty-year period was prepared using the same assumptions used for projecting the next ten years of the current Prop. B program. Approximately $1.6 billion is estimated to be available from the sales tax extension. All projected sales tax extension dollars are stated in year 2001 dollars.

The draft Expenditure Plan was developed using cost estimates and sales tax funding needs supplied by Muni, the Department of Public Works, the Planning Department, and the Department of Parking and Traffic. Because the sales tax program has successfully leveraged federal, state, and other local funds for transportation, matching of sales tax dollars to other funds was assumed to continue in the sales tax extension. Specific matching ratios for each project and program were estimated in the draft Expenditure Plan. Some of the matching ratios outlined in the draft expenditure plan may not be achievable. In cases where sources of matching funds couldn't be identified, the financial element of the Transportation Plan reflects a shortfall.

Matching funds may be required by the Transportation Authority on a specific program or project, on the subcategory as a whole (allowing some projects to have little or no match and others to have higher match requirements), or simply as a target. If the target matches aren't met and the project is funded entirely by sales tax dollars, the subcategory of program/project will still be limited to the allocation provided in the Expenditure Plan. Clearly the lack of leveraging will result in a smaller program than if sales tax dollars are matched by other funds. The intent of this approach is to be flexible to the reality of fund availability while maximizing funding to the transportation program.

In this draft of the Expenditure Plan, the sales tax needs exceed the amount available by $251 million. Through the review process of the Draft Transportation Plan and Expenditure Plan the project and program costs and allocations will be refined so that the sales tax funds are not oversubscribed.

S. F. County Transportation Plan - Half-Cent Sales Tax for Transportation
DRAFT Expenditure Plan
FY 2011-2031
($millions, in 2001 $)

Sales Tax Shares by Category	
60% Transit	$953
30% Streets and Roads	$477
8% Paratransit	$127
2% Planning	$32
TOTAL	$1,589

Category	Project	Total Amount	SalesTax Amount
Transit			
	Muni Fleet Replacement	$1,174.0	$254.6
	Motor Coach		
	Trolley Coach		
	Artic Trolley Coach		
	Light Rail Vehicles		
	Paratransit		
	Muni Fleet Rebuild & Rehabilitation	$315.5	$79.8
	Motor Coach		
	Trolley Coach		
	Light Rail Vehicles		
	Cable Cars		
	PCCs		
	New Muni Vehicles	106.2	53.1
	Light Rail Vehicles		
	Historic Streetcars		
	Trolley Coach Extensions and Conversions	$105.6	$52.8
	Expand Muni Accessibility Program	$27.5	$6.9
	Corridor Construction	$520.0	$220.0
	Third Street Phase 2: Chinatown Subway		
	Corridor Planning		
	Rehabilitate Guideways	$478.2	$95.6
	Overhead		
	Rails		
	Cable Car		
	Rehabilitate and Replace Facilities	$434.5	$273.5
	Revenue Center		
	Expand Metro East		
	Subway Stations		
	Facility Preservation Plan		
	Training Center		
	Operating Divisions		
	Graffiti Prevention		
	Operator Restrooms		
	Headquarters		
	Central Warehouse		
	Control Center & Communications	$76.3	$39.3
	Control Center		
	Radio/AVL System		
	Equipment	$104.7	$20.9
	Miscellenous Equipment		
	Office Equipment		
	Non-revenue vehicles		
	Total Transit	**$3,342.5**	**$1,096.5**

Category	Project	Total Amount	SalesTax Amount
Streets and Roads			
	Resurfacing	$625.6	$330.0
	Backlog (FY00)		
	Annual Program		
	New Roadways and Bridge Seismic	$27.0	$15.0
	Illinois Street		
	Townsend (4th to 7th Street)		
	Mission/S. Van Ness Underpass		
	Seismic Reinforcement		
	Traffic Signals and Control Devices	$327.9	$107.0
	New Traffic Signals		
	Upgrade Signals		
	Other Signal Projects		
	ITMS		
	Traffic Signs & Control Devices		
	Equipment	$27.0	$21.6
	Street Repair/Cleaning Equipment		
	Traffic Engineering Equipment		
	Transit Prefrential Streets Capital Projects	$30.0	$7.5
	Street Trees - New and Maintain Existing	$80.0	$40.0
	Bicycle Program Capital Projects	$50.0	$25.0
	Pedestrian Program	$95.0	$36.0
	Curb Ramp Program		
	Pedestrian Projects		
	Traffic Calming Projects		
	Sidewalk Repair Backlog		
	Sidewalk Repair Annual Program		
	Traffic Safety Education	$2.0	$2.0
	Total -- Streets and Roads	**$1,298.2**	**$584.1**
Paratransit Program		$127.1	$127.1
	Operations -Annual		
Countywide Planning		$32.0	$32.0
	Transportation Systems Management		
	Countywide Long Range Plan Update & Modeling		
	Multi-modal Planning		
GRAND TOTAL		**$4,928.1**	**$1,840.0**